

RATIONALIZED INTEGRATED SCIENCE TERM 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

WEEK 1: LESSON 1

Strand: Scientific Investigation

Sub Strand: Introduction to Integrated Science

Specific Learning Outcomes:

- By the end of the lesson, the learner should be able to:

1. State the meaning of Integrated Science.
2. Identify the components of Integrated Science as a field of study.
3. Use digital devices to search for information on the components of Integrated Science.
4. Appreciate the components of Integrated Science.

Key Inquiry Questions:

- What is Integrated Science?
- What are the components of Integrated Science?

Learning Resources:

- Active Integrated Science textbook (pages 1-3)
- Digital devices (tablets/computers)
- Charts (visual aids representing components of Science)

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson on basic scientific principles.

- Engage learners in a brief discussion about what they already know about science to connect to Integrated Science.
- Introduce the topic of Integrated Science using visuals from charts that highlight various scientific fields.

Lesson Development (30 minutes):

Step 1: Understanding Terminology

- Activity: In pairs, learners will use dictionaries to find and share the definitions of "Integrated" and "Science."
- Discussion: Come together as a class to formulate a concise definition of Integrated Science based on the terms discussed.

Step 2: Breaking Down Integrated Science

- Activity: Groups of students will brainstorm on a piece of chart paper what they think Integrated Science includes.
- Sharing: Each group will present their ideas to the class, emphasizing their interpretations and conclusions about the subject matter.

Step 3: Researching Online

- Activity: Individually or in small groups, students will use digital devices to search for information about the components of Integrated Science.
- Goal: Identify at least three key components and take notes on their findings.

Step 4: Discussion and Reflection

- Activity: As a class, discuss the components identified during the online research.
- Visualization: Fill out a class chart together, listing the findings and adding any new insights from group discussions. Draw connections between the components.

Conclusion (5 minutes):

- Summarize the main points of the lesson, ensuring the core definitions and components of Integrated Science are reinforced.
- Conduct an interactive activity: Have students shout out components, and those who contribute will receive a "Science Star" sticker.
- Preview the next session by asking students to think about how Integrated Science relates to their everyday lives and what examples they can come up with.

Extended Activities:

- Science Fair Project Idea: Students can create a mini-project showcasing how different components of Integrated Science interact in real-life scenarios, like weather patterns or environmental changes.
- Integrated Science Journal: Encourage students to maintain a journal where they explore various scientific news articles or phenomena, linking them back to the components of Integrated Science.
- Group Presentations: Learners can be assigned different components of Integrated Science to research at home and present to the class in the following weeks.

Teacher Self-Evaluation:

WEEK 1: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Introduction to Integrated Science

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Identify career opportunities related to Integrated Science.
2. Use digital devices to search for information on careers related to Integrated Science.
3. Appreciate the career opportunities linked to knowledge and skills in Integrated Science.

Key Inquiry Question(s):

- Which career opportunities relate to Integrated Science?

Learning Resources:

- Active Integrated Science textbook, pages 3-5
- Digital devices (tablets, computers, or smartphones)

Organisation of Learning:

Introduction (5 minutes):

- Start with a brief review of the previous lesson (e.g., what Integrated Science is and its importance).
- Encourage learners to read together from pages 3-5 in the Active Integrated Science textbook. Ask guiding questions to help them understand the key concepts related to careers in this field.

Lesson Development (30 minutes):

Step 1: Group Discussion

- Divide the class into small groups.
- Ask students to look at the pictures on page 3 of their textbook. Each group will identify the careers shown in the images together. Provide guiding questions to help them analyze what they see.

Step 2: Internet Research

- In their groups, learners will use their digital devices to search for more information on the careers identified in the previous step.
- They should find one or two interesting facts about each career (e.g., required education, daily tasks, salary, demand) and prepare to share their findings with the class.

Step 3: Group Discussion on Integrated Science Skills

- After the research, each group should discuss and write down how the knowledge and skills learned in Integrated Science connect to the careers they researched.
- Provide prompts such as: "What skills do you think are most important for this career?" or "How does knowledge in science help in this job?"

Step 4: Career Chart Creation

- Using locally available materials (e.g., poster paper, markers, newspapers), groups will create a chart displaying the careers they researched, along with images, facts, and how they connect to Integrated Science.
- Allow time for them to prepare their charts for display.

Conclusion (5 minutes):

- Bring the class back together and summarize the key points covered in the lesson.
- Highlight some of the career opportunities and the skills needed in those fields.

- Conduct a brief interactive activity by asking students to share one interesting fact they learned about a career in Integrated Science.
- Preview upcoming topics, possibly touching on "How Science Affects Our Lives," to pique their interest.

Extended Activities:

- Career Day Project: Research and prepare a short presentation on a specific career in Integrated Science and present it to the class. Include information such as daily tasks, necessary education, and any interesting facts.
- Interview a Professional: If possible, arrange for students to interview someone who works in a science-related job, either in person or through video conferencing, to learn firsthand about the career path and requirements.

Teacher Self-Evaluation:

WEEK 1: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Introduction to Integrated Science

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Define the term pathway.
2. Identify the pathways related to Integrated Science.
3. Search for information from print or digital media on pathways related to integrated science at senior school.
4. Appreciate the importance of integrated science in relation to the three pathways.

Key Inquiry Question(s):

- Which pathway in senior school does Integrated Science relate to?

Learning Resources:

- Active Integrated Science, pages 5-6
- Charts
- Computers/tablets for digital research (if available)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on the importance of science in everyday life and how it connects to various disciplines.

- Guide learners to read and discuss relevant content from the learning resources, focusing on pathways and their significance in understanding integrated science.

Lesson Development (30 minutes):

Step 1: Defining "Pathway"

- In pairs, students brainstorm what they think the term “pathway” means in the context of education.
- Discuss as a class and provide a clear definition: A pathway is a route or direction one can take in their education or career.

Step 2: Identifying Pathways

- Students will work in small groups to list the pathways related to Integrated Science, such as Life Sciences, Physical Sciences, and Environmental Sciences.
- Groups will share their lists, and the teacher will compile these on the board.

Step 3: Connecting Integrated Science to Pathways

- Each group will choose one pathway and discuss how Integrated Science is related to it. They will prepare a short explanation to share with the class.
- Teacher prompts: "How does understanding Integrated Science help you in this pathway?"

Step 4: Researching Pathways

- Using available print or digital media, students will search for information on one specific senior school pathway related to Integrated Science.
- They must find at least one fact or statistic about how Integrated Science is beneficial in that chosen pathway and prepare to present it briefly to the class.

Conclusion (5 minutes):

- Summarize key points discussed throughout the lesson: definitions, pathways, and the importance of Integrated Science.

- Conduct a brief interactive activity like a quiz or a "Think-Pair-Share" to reinforce key topics.
- Preview the next session focusing on how integrated science can be applied in real-life scenarios and prepare questions to ponder for the next lesson.

Extended Activities:

- Pathway Project: Students can create a poster or digital presentation on their chosen pathway and how Integrated Science plays a role in it. They can include future career options related to this pathway.
- Guest Speaker: Invite a professional from a field related to Integrated Science (e.g., environmental science, health sciences) to speak to the class about their work and the importance of integrated science in their career.

Teacher Self-Evaluation:

WEEK 1: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Introduction to Integrated Science

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. State the importance of Integrated Science in daily life.
2. Discuss the importance of science in health and agriculture.
3. Use digital devices to search for information on the importance of science in health and agriculture.
4. Appreciate the importance of integrated science in daily life.

Key Inquiry Questions:

- What is the importance of Integrated Science in daily life?
- How is the knowledge acquired in Integrated Science useful in daily life?

Learning Resources:

- Active Integrated Science textbook, pages 6-7
- Digital devices (tablets, computers)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson's key points.

- Guide learners to read and discuss relevant content from pages 6-7 of the Active Integrated Science textbook. Emphasize the importance of Integrated Science.

Lesson Development (30 minutes):

Step 1: Brainstorming Importance

- In small groups, learners brainstorm and list ways Integrated Science is important in their daily lives. Encourage them to think about examples from home, school, and their community.

Step 2: Discussing Health and Agriculture

- Pairs of learners discuss how science impacts health (e.g., medicine and hygiene) and agriculture (e.g., crop production and food safety). Facilitate a class discussion to share findings.

Step 3: Research Activity

- Using digital devices, learners will search for articles or videos about the role of science in health and agriculture. Ask them to take notes on one new fact they learn.

Step 4: Sharing Research

- Each group shares one fact from their research with the class, highlighting the significance of that fact in daily life.

Conclusion (5 minutes):

- Summarize key points learned during the lesson, reiterating the importance of Integrated Science in health and agriculture.
- Conduct a brief interactive activity such as a hand-raising quiz or a thumbs up/down for statements about Integrated Science.
- Preview the next lesson by asking questions or setting themes related to what's coming up.

Extended Activities:

- Science Fair Project: Learners can choose a topic related to Integrated Science and create a presentation or poster to showcase their findings.
- Field Trip or Virtual Tour: Organize a visit to a local farm, health clinic, or science center to see the practical applications of Integrated Science.
- Research Assignment: Learners can write a short report on a specific scientific advancement in health or agriculture and its impact on daily life.

Teacher Self-Evaluation:

WEEK 1: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Introduction to Integrated Science

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. State the importance of science in industry and transport.
2. Search the internet for information on the importance of science in industry and transport.
3. Appreciate the role of science in industries and transport.

Key Inquiry Question:

- What is the role of science in industries and transport?

Learning Resources:

- Integrated Science Learner's Book
- Lesson Notes
- Realia (real-life objects or examples related to the topic)
- Digital Devices (tablets, computers, etc.)
- Charts (visual aids related to the topic)

Organisation of Learning:

Introduction (5 minutes):

- Review Previous Lesson: Begin the class by briefly discussing the last lesson's key points related to scientific investigation and inquiry.

- Engagement: Ask students to share what they know about the link between science, industry, and transport. Facilitate a brief brainstorming session.

Lesson Development (30 minutes):

Step 1: Group Brainstorming

- In pairs, learners will list down ways they think science influences industry and transport.
- Encourage them to think about everyday experiences (e.g., how science helps in public transportation, manufacturing, etc.).

Step 2: Internet Research

- Learners will use their digital devices to search for articles, videos, or facts about the role of science in industry and transport.
- Provide guidance on reliable sources and specific keywords to use for their search.

Step 3: Group Discussion

- After gathering information, students will regroup and share their findings with another pair.
- Facilitate a class discussion where groups present one or two key points they discovered.

Step 4: Reflection and Appreciation

- Ask students to reflect on how their understanding has changed and why science is vital in industry and transport.
- Use a few guiding questions to deepen their thinking, such as: "How might our lives be different without advancements in science?"

Conclusion (5 minutes):

- Summarize Key Points: Recap the main ideas discussed throughout the lesson using a chart to visualize the role of science.

- Interactive Activity: Conduct a quick quiz or an “exit ticket” where each student writes down one new thing they learned about the importance of science in industry and transport.
- Preview Next Session: Introduce the next topics, such as "Technological Innovations" or "Scientific Principles Behind Transportation", and encourage students to think about questions they have regarding these topics.

Extended Activities:

- Science in Everyday Life Project: Students can choose an industry (e.g., healthcare, manufacturing, transport) and create a presentation or poster showing the role of science in that area.
- Field Trip or Guest Speaker: Organize a visit to a local industry or invite a professional who works in a scientific field related to transport or industry to share real-world applications of science.

Teacher Self-Evaluation:

WEEK 2: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Introduction to Integrated Science

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. State the importance of science in food and textiles and related career opportunities.
2. Use digital devices to search for information regarding the importance of science in food and textiles and career opportunities.
3. Appreciate the importance of science in our daily life.

Key Inquiry Question(s):

- Which accidents can occur in the laboratory?
- What are the causes of common laboratory accidents?

Learning Resources:

- Charts
- Active Integrated Science pg 11-12
- Digital device (e.g., tablet or computer)

Organisation of Learning:

Introduction (5 minutes):

- Review Previous Lesson: Briefly recap what was learned in the last session, focusing on scientific principles that may relate to the current topic.

- Discussion of Key Concepts: Invite learners to read from the learning resources and discuss the significance of science in everyday life, particularly in food and textiles.

Lesson Development (30 minutes):

Step 1: Brainstorming Session

- Group Activity: Divide learners into small groups. Ask them to brainstorm the ways in which science is important in food production and textile manufacturing. Encourage them to think about safety, innovation, and efficiency.

Step 2: Research Using Digital Devices

- Individual or Pair Work: Students will use digital devices to search the internet for specific examples of how science is applied in food and textile industries. They should also look for potential career opportunities that rely on scientific principles.

Step 3: Group Discussion

- Sharing Findings: Bring the class together and have each group briefly present their findings. Facilitate a discussion about the different aspects of science in these industries, encouraging students to connect their research to real-world scenarios.

Step 4: Reflect on Safety in Science

- Discuss Laboratory Safety: Introduce the inquiry questions regarding laboratory accidents. Ask learners to share ideas about which accidents can occur and the common causes. Emphasize the importance of safety in scientific practices.

Conclusion (5 minutes):

- Summarize Key Points: Recap what was discussed regarding the significance of science in food and textiles, and the importance of safety in laboratories.
- Interactive Activity: Conduct a quick quiz or a game where students can match safety procedures with the corresponding laboratory hazard.

- Prepare for Next Session: Preview the next topic about the role of technology in scientific advancements and ask students to think about the relationship between technology and science.

Extended Activities:

- Research Project: Assign students a project where they can explore a specific career in science related to food or textiles. They can create a presentation or report detailing how science plays a vital role in that career.

- Safety Poster Creation: As an individual or group project, learners can create informative posters about laboratory safety practices and present them in the classroom.

Teacher Self-Evaluation:

WEEK 2: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Safety

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Define the term hazard.
2. Identify the common hazards in the laboratory.
3. Draw the symbols of the common hazards in the laboratory.
4. Appreciate the importance of hazard symbols in the laboratory.

Key Inquiry Question(s):

- What are the common hazards in the laboratory?

Learning Resources:

- Active Integrated Science, pages 9-11
- Digital device (tablets or computers)
- Charts
- Pictures of hazard symbols

Organisation of Learning:

Introduction (5 minutes):

- Briefly review the previous lesson on basic lab equipment and its uses.

- Guide students to read and discuss relevant content from the learning resources. Focus on understanding key concepts such as what a hazard is and why it's important to know about them.

Lesson Development (30 minutes):

Step 1: Defining Hazards

- In pairs, have students brainstorm in small groups to come up with a definition of the term "hazard."
- Facilitate a class discussion where students share their definitions, guiding them to a clear and concise understanding of what constitutes a hazard in the laboratory.

Step 2: Identifying Common Hazards

- Still in pairs, students will identify common hazards they might encounter in a laboratory setting, such as broken glass, chemical spills, electrical issues, etc.
- Write their contributions on the board and discuss the significance of each hazard.

Step 3: Interpreting Hazard Symbols

- Show students a few examples of common lab hazard symbols using charts or pictures (e.g., toxic, flammable, corrosive).
- Students will interpret what each symbol means and discuss how it relates to safety in the lab.

Step 4: Creating Hazard Symbol Charts

- Students will use digital devices to search for photos of common laboratory hazards and their symbols.
- On charts, students will draw the symbols of the hazards identified earlier and label them appropriately.

Conclusion (5 minutes):

- Summarize the key points discussed: definition of hazards, examples of common hazards, and the importance of hazard symbols.
- Conduct an interactive quiz or game where students match symbols with their meanings to reinforce learning.
- Prepare students for the next lesson by briefly introducing the next topic (e.g., safe lab practices) and asking them to think about reasons why safety is important in scientific investigations.

Extended Activities:

- Safety Poster Project: Have students create a safety poster that illustrates various laboratory hazards and their associated symbols. This can be displayed in the classroom or around the school.
- Research Assignment: Assign students to research a specific laboratory hazard in detail and present their findings to the class, including its effects, ways to mitigate it, and the importance of recognizing it.

Teacher Self-Evaluation:

WEEK 2: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Safety

Specific Learning Outcomes:

- By the end of the lesson, learners will be able to:

1. Define the term "accident."
2. Outline the causes of common accidents in the laboratory.
3. Discuss the causes of common accidents in the laboratory.
4. Adhere to safety measures in the laboratory to avoid accidents.

Key Inquiry Questions:

- What are the common accidents in the laboratory?
- What are the causes of the common accidents in the laboratory?

Learning Resources:

- Lesson notes
- Active Integrated Science pg 11-12
- Charts

Organization of Learning:

Introduction (5 minutes):

- Review the previous lesson by quickly discussing any relevant topics or concepts previously covered.

- Guide learners in reading and discussing relevant content from the learning resources, focusing on understanding the terms and concepts related to laboratory safety.

Lesson Development (30 minutes):

Step 1: Definition of Accident

- Activity: In groups, have students brainstorm what they think an "accident" is. Each group will then present their definition to the class.
- Teacher's Role: Facilitate the discussion and ensure key points, such as unexpected events leading to damage or injury, are included in the final class definition.

Step 2: Identifying Common Laboratory Accidents

- Activity: Ask groups to identify common accidents that can occur in a laboratory setting (e.g., spills, cuts, fires). Each group will compile a short list of accidents.
- Teacher's Role: Support groups in formulating their lists and encourage them to think about real-life scenarios they might have heard of or experienced.

Step 3: Discussing Causes of Accidents

- Activity: Groups will discuss and write down the potential causes of each common accident they identified in Step 2 (e.g., equipment malfunction, careless handling, lack of proper safety gear).
- Teacher's Role: Guide discussions to help students connect each accident with potential causes, fostering analytical thinking about safety.

Step 4: Creating and Presenting Safety Charts

- Activity: Each group prepares a chart displaying one common accident and its cause(s). They will present their charts to the class for collective learning.
- Teacher's Role: Assist in setting up the presentation area and encourage clear communication and reasoning in students' presentations.

Conclusion (5 minutes):

- Summarize the key points discussed during the lesson and the learning objectives achieved.
- Conduct a brief interactive activity where each student shares one safety measure they will follow in the lab to avoid accidents.
- Prepare learners for the next session by previewing upcoming topics or encouraging questions they should consider before the next class.

Extended Activities:

- Research Project: Learners can investigate famous laboratory accidents that have occurred in history, preparing a brief report or presentation on what went wrong and how it could have been prevented.
- Lab Safety Poster: Students could create posters promoting laboratory safety rules, to be displayed in the classroom or lab area to remind everyone of the importance of safety.
- Role Play: Organize a role-playing exercise where students simulate lab scenarios, highlighting both safe and unsafe practices, followed by a discussion on the outcomes.

Teacher Self-Evaluation:

WEEK 2: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Safety

Specific Learning Outcomes:

- By the end of the lesson, learners will be able to:

1. Outline the first aid procedure for burns and scalds.
2. Demonstrate the first aid procedure for minor burns and scalds.
3. Acknowledge the first aid procedures for burns and scalds.

Key Inquiry Question(s):

- What is the first aid procedure for minor burns and scalds?

Learning Resources:

- Active Integrated Science, pg 14
- Digital device (tablets, laptops)
- Lesson notes
- Video clips on first aid for burns and scalds

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of laboratory safety rules discussed in the previous lesson, inviting students to share what they remember.

- Introduce today's focus on first aid for burns and scalds by explaining its importance in a laboratory setting.
- Guide learners to read and discuss relevant content from the learning resources to establish foundational knowledge necessary for the lesson.

Lesson Development (30 minutes):

Step 1: Watch and Explore

- In pairs, students will use digital devices to search for and watch video clips on first aid procedures for burns and scalds.
- Encourage students to take notes on key steps being demonstrated in the videos.

Step 2: Outline the Procedures

- After watching the videos, each pair will outline the first aid procedures for minor burns and scalds, focusing on clarity and accuracy.
- Provide a template for them to fill out, highlighting easy-to-understand steps.

Step 3: Group Discussion

- Once outlines are complete, regroup and have a class discussion where each pair shares their outlines, correcting any misconceptions as necessary.
- Encourage debate about why certain steps are essential and what could happen if they are skipped.

Step 4: Role-Play Demonstration

- Have the pairs collaborate to role-play the first aid procedure for burns and scalds, focusing on key steps and communication.
- If possible, record these role-plays using a digital device to review later.

Conclusion (5 minutes):

- Summarize the key points discussed, emphasizing the importance of knowing how to handle burns and scalds in laboratory situations.
- Conduct a quick interactive quiz or game to reinforce the main topics—perhaps a "true or false" about safety procedures to get students actively involved.
- Preview the next session, hinting at related topics like other types of injuries in the lab (cuts, spills) and what first aid steps might be necessary.

Extended Activities:

- Create a First Aid Poster: Have students design a colorful poster highlighting the first aid procedures for burns and scalds. These posters can be displayed in the classroom or around the school to promote safety awareness.
- Safety Scenario Role-Play: Students can create scenarios involving laboratory accidents and present their response to those situations, emphasizing the correct first aid measures.
- First Aid Kit Investigation: Encourage students to investigate what should be included in a basic first aid kit for the lab, potentially leading to a class project where they can assemble one together.

Teacher Self-Evaluation:

WEEK 2: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Safety

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Outline the first aid procedure for minor cuts.
2. Demonstrate the first aid procedure for minor cuts in the laboratory.
3. Enjoy demonstrating the first aid procedure for cuts in the laboratory.

Key Inquiry Question:

- What is the first aid procedure for minor cuts?

Learning Resources:

- Active Integrated Science, pg 15
- Digital devices (tablets/computers)
- Video clips on first aid procedures
- Top Scholar Integrated Science, pg 12-13

Organisation of Learning:

Introduction (5 minutes):

- Briefly review the previous lesson on laboratory safety.
- Prompt students to read and discuss the relevant content from the learning resources, focusing on the importance of knowing first aid procedures.

Lesson Development (30 minutes):

Step 1: Research and Discussion

- In pairs, learners use digital devices to search for information and watch video clips on the first aid procedure for minor cuts.
- Encourage them to take notes on the steps involved.

Step 2: Group Discussion

- After watching videos, conduct a whole-class discussion.
- Ask each pair to share what they found and outline the key steps in the procedure.

Step 3: Role-Playing

- Assign roles within the pairs: one as the person with a cut (actor), and the other as the first aider.
- Students role-play the first aid procedures they researched, using props or materials mimicking a minor cut (such as fake blood or bandages).
- Record their role plays for review.

Step 4: Class Sharing

- Groups present their role plays to the class.
- Discuss what went well and areas for improvement. Address any misconceptions that students may have about the procedure.

Conclusion (5 minutes):

- Summarize key points and the learning objectives achieved: outlining and demonstrating first aid procedures for minor cuts.
- Conduct a quick interactive quiz (e.g., Kahoot!) to reinforce the main points discussed.
- Preview the next session: "What to do in an emergency situation in the lab?" to pique their interest.

Extended Activities:

- Create a First Aid Kit: Have students create a list of items to include in a basic first aid kit for the laboratory. They can present their kit ideas to the class in the next session.
- First Aid Poster: Students design an educational poster that outlines the first aid procedure for minor cuts, which can be displayed in the classroom or lab for ongoing reference.
- First Aid Scavenger Hunt: Organize a scavenger hunt in the classroom or lab where students find items related to first aid or lab safety, reinforcing their learning in a fun way.

Teacher Self-Evaluation:

WEEK 3: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Safety

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Outline the first aid procedure for ingesting harmful substances in the laboratory.
2. Demonstrate the first aid procedure for ingesting harmful substances in the laboratory.
3. Enjoy role-playing the first aid procedure for ingesting harmful substances in the laboratory.

Key Inquiry Question:

- What is the first aid procedure for ingesting harmful substances?

Learning Resources:

- Active Integrated Science (pg 15)
- Lesson notes
- Top Scholar Integrated Science (pg 15)
- Digital devices

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson (Safety Precautions in the Laboratory).
- Guide learners to read and discuss relevant content from the resources focusing on understanding the first aid steps for ingesting harmful substances.

Lesson Development (30 minutes):

Step 1: Outlining the First Aid Procedure

- In groups, learners will outline the steps they believe are necessary in the event of ingesting a harmful substance.
- Encourage each group to create a bullet-point list and appoint a spokesperson to share their ideas.

Step 2: Discussion of Procedures

- Facilitate a class discussion where each group's procedure is shared.
- Correct any misconceptions and emphasize the importance of each step in the procedures they discuss.
- Highlight key actions like calling for help and following instruction labels on containers.

Step 3: Demonstration of the Procedure

- Teacher demonstrates the first aid procedure while explaining each step.
- Show items such as the first aid kit that may be used in actual situations.

Step 4: Role-Playing the First Aid Procedure

- In groups, learners take turns role-playing the first aid procedure they outlined earlier.
- This will help solidify their understanding and ensure they can correctly perform the steps in a fun way.

Conclusion (5 minutes):

- Summarize key points regarding the first aid procedure for ingesting harmful substances.
- Conduct a brief interactive quiz or flashcards reinforcing the main topics discussed.
- Introduce the next session's topic: Creating a safe laboratory environment.

Extended Activities:

- Research Project: Each student can choose one harmful substance (e.g., bleach, acids) and create an informative poster outlining its dangers and the first aid measures if ingested.
- Safety Poster Contest: Collaborate in groups to design posters that demonstrate laboratory safety protocols, including first aid procedures.

Teacher Self-Evaluation:

WEEK 3: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Safety

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Outline the safety measures to observe while in the laboratory.
2. Discuss the safety measures to observe in the laboratory.
3. Design posters showing the safety measures that laboratory users should practice.
4. Acknowledge the safety measures to observe in the laboratory.

Key Inquiry Question(s):

- Which safety measures should we observe while in the laboratory?

Learning Resources:

- Lesson notes
- Charts
- Posters
- Active Integrated Science textbook (pg 15-17)

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson to activate prior knowledge.

- Ask students questions about their experiences or knowledge of laboratory safety to build engagement.
- Guide learners to read and discuss relevant content (specifically pages 15-17 in the Active Integrated Science textbook), emphasizing the key safety measures.

Lesson Development (30 minutes):

Step 1: Identify Safety Measures

- In pairs, students will brainstorm a list of safety measures they think are important in a laboratory setting.
- Walk around the room to assist and encourage discussion among pairs.

Step 2: Class Discussion

- Bring the class back together and ask each pair to share their ideas.
- Write these ideas on the board, and guide the discussion to ensure all the essential safety measures are covered (e.g., wearing safety goggles, not eating in the lab, proper handling of equipment).

Step 3: Poster Creation

- In the same pairs, students will create a simple poster highlighting 3-5 safety measures that they feel are most important.
- Provide art supplies (markers, paper, etc.) and encourage creativity.

Step 4: Poster Display and Review

- Have students display their posters around the classroom.
- Conduct a brief gallery walk where pairs can look at each other's work and discuss any differences or additional measures identified.

Conclusion (5 minutes):

- Summarize the key points discussed during the lesson, focusing on the critical safety measures.
- Reinforce the importance of these measures in ensuring a safe laboratory environment.
- Conduct a quick interactive quiz (e.g., true/false or raise your hand if you agree/disagree) to reinforce learning.
- Preview the next lesson, hinting at exploring more about scientific investigations and how safety is crucial to experimental procedures.

Extended Activities:

- Science Safety Role-Play: Have students act out different scenarios in the lab (both safe and unsafe practices) and discuss the outcomes.
- Safety Video Project: In small groups, students can create a short video demonstrating proper lab safety techniques, which can later be shared with the class or posted online for educational purposes.
- Research Assignment: Assign students to research the proper safety measures for a specific type of lab (e.g., chemistry, biology) and present their findings in the next lesson.

Teacher Self-Evaluation:

WEEK 3: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Safety

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. State the importance of safety measures in the laboratory.
2. Discuss the importance of safety measures in the laboratory.
3. Use digital devices to search for information on the importance of safety measures in the laboratory.
4. Appreciate the importance of safety in the laboratory and access to a healthy working environment.

Key Inquiry Question(s):

- Why is it important to observe safety measures in the laboratory?

Learning Resources:

- Active Integrated Science textbook, pages 17-18
- Lesson notes
- Digital devices (tablets or laptops with internet access)

Organisation of Learning:

Introduction (5 minutes):

- Begin the lesson by briefly reviewing the previous topic discussed in class.

- Introduce the topic of laboratory safety by asking students if they have seen safety measures used in other contexts (e.g., cooking, construction).
- Guide learners to read and discuss relevant content from pages 17-18 of the Active Integrated Science textbook, focusing on understanding key concepts regarding lab safety.

Lesson Development (30 minutes):

Step 1: Brainstorming Session

- In pairs, have students brainstorm and list at least five safety measures that should be taken in a laboratory setting. Encourage them to think about both physical safety (like wearing goggles) and environmental safety (like proper disposal of materials).

Step 2: Research Activity

- Using digital devices, students will search for additional information on laboratory safety measures. They should look for statistics about accidents in laboratories and how safety measures can prevent them. Instruct them to take notes on their findings.

Step 3: Group Discussion

- Reconvene as a class and give each pair a few minutes to share one key finding from their internet research. Lead a class discussion on the reasons behind why each safety measure is important.

Step 4: Visual Summary

- Create a shared chart (on the whiteboard or digitally) that summarizes the safety measures discussed. Students can add their thoughts or examples of situations where these measures could prevent accidents.

Conclusion (5 minutes):

- Summarize the key points discussed in the lesson, reinforcing the importance of safety measures in the laboratory and how they help create a healthy working environment.

- Conduct a quick interactive activity: Ask students to match safety equipment (goggles, lab coat, gloves) with their use cases.
- Prepare learners for the next session by giving them a preview of upcoming topics, such as "Dangerous Substances in the Lab."

Extended Activities:

- Safety Poster Creation: Assign students to create colorful safety posters highlighting different safety measures discussed in class. These posters could be displayed in the classroom or laboratory.
- Lab Safety Debates: Organize debates on which safety measures are the most important and why, encouraging students to think critically and articulate their opinions.
- Safety in Real Life: Have students interview a professional (like a nurse, lab technician, or teacher) about safety measures in their jobs and present their findings to the class.

Teacher Self-Evaluation:

WEEK 3: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Identify the basic skills in science.
2. Discuss the use of the basic skills in science.
3. Search the internet for the meaning and applications of the basic science skills.
4. Appreciate the use of basic skills in science in our daily lives.

Key Inquiry Question:

- What are the basic skills in science?

Learning Resources:

- Active Integrated Science pg 20-22
- Digital devices for internet access
- Charts
- Flashcards
- Lesson notes

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on scientific methods.

- Guide learners to read and discuss relevant content from Active Integrated Science, particularly pages 20-22, emphasizing the understanding of key concepts related to basic skills in science.

Lesson Development (30 minutes):

Step 1: Identification of Basic Science Skills

- In pairs, students will brainstorm and list what they think are the basic skills in science.
- Groups will share their lists with the class.

Step 2: Discussion on Basic Science Skills

- Each group will discuss the importance of each skill (manipulative skills, measuring skills, observation skills, prediction skills, communication skills, and conclusion skills).
- One representative from each group will summarize their discussions to the class.

Step 3: Internet Research

- Using digital devices, students will search for definitions and real-life applications of the identified basic science skills.
- Encourage them to find examples of each skill in everyday activities, such as cooking, gardening, or sports.

Step 4: Flashcard Preparation and Display

- Students will create flashcards that include the name of each skill along with its definition and application.
- Each group will display their flashcards around the classroom for a mini-gallery walk, allowing students to learn from each other's work.

Conclusion (5 minutes):

- Summarize key points and learning objectives achieved during the lesson.

- Conduct a brief interactive quiz using the flashcards to reinforce the main topics.
- Provide a sneak peek into the next session, which will focus on how to apply these skills in practical experiments.

Extended Activities:

- Science Skills Journal: Have students keep a journal for one week where they note down instances when they use any of the basic science skills in their daily life.
- Skill Charades: Arrange a game where students act out different science skills, and the rest of the class must guess which skill it is. This promotes understanding through active engagement.
- Skill in Action: Challenge students to conduct a simple experiment at home using at least three different basic science skills they've learned about. They can present their findings in the next class.

Teacher Self-Evaluation:

WEEK 3: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Basic Science Skills (c): The International System of Units

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Define the term International System of Units.
2. Differentiate between basic and derived quantities.
3. List the basic quantities and their SI units.
4. Prepare charts showing the basic quantities and their SI units.

Key Inquiry Questions:

- What is the SI unit of temperature and length?
- What are the 7 basic quantities?
- What is the difference between basic and derived quantities?

Learning Resources:

- Active Integrated Science, pages 24-27
- Digital devices (tablets/computers)
- Lesson notes

Organization of Learning:

Introduction (5 minutes):

- Review the previous lesson on measurement.

- Guide learners to read and discuss relevant content from the learning resources regarding SI units, highlighting key concepts related to the lesson.

Lesson Development (30 minutes):

Step 1: Introduction to SI Units

- Begin by explaining the concept of the International System of Units (SI) and its importance in science.
- Ask students to share what they already know about units of measurement.
- Use digital devices for students to research the definition of the International System of Units.

Step 2: Basic vs. Derived Quantities

- Discuss the differences between basic quantities (fundamental measurements) and derived quantities (combinations of basic measurements).
- Create a chart together as a class to list these differences.
- Provide examples for clarification (e.g., length vs. area).

Step 3: Identifying Basic Quantities

- Introduce the 7 basic quantities in the SI system: mass, length, time, electric current, thermodynamic temperature, amount of substance, and luminous intensity.
- Discuss their corresponding SI units (kg, m, s, A, K, mol, cd).

Step 4: Chart Preparation

- In small groups, have students create charts that list the 7 basic quantities and their SI units.
- Allow students to use digital tools or art supplies to make their charts visually appealing, then display them around the classroom.

Conclusion (5 minutes):

- Summarize key points of the lesson, focusing on the definition of SI units, basic vs. derived quantities, and the 7 basic quantities.
- Conduct a quick quiz or interactive discussion to reinforce learning, asking questions related to the key inquiry questions.
- Preview the next topic: “Derived Units and Their Applications in Science.”

Extended Activities:

- Research Project: Challenge students to find out different units used in various countries and compare them to SI units. They could create a presentation or report on their findings.
- Measurement Scavenger Hunt: Organize a scavenger hunt where students find items in the classroom or school that can be measured using basic SI units (e.g., measure the length of the classroom in meters, weigh books in kilograms).

Teacher Self-Evaluation:

WEEK 4: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Define the terms temperature and time as basic units.
2. Identify the SI units of temperature and time (Kelvin and seconds).
3. Carry out activities related to the measurement of these quantities and express them in SI units.
4. Enjoy carrying out practical activities on measuring temperature and time.

Key Inquiry Question(s):

- What are temperature and time?
- What are the SI units of temperature and time?

Learning Resources:

- Active Integrated Science pages 27-29
- Instruments for practicals (thermometers, stopwatches)
- Digital devices (tablets or computers for research)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson by asking students what they remember about measurement units.

- Guide learners to read the relevant sections in the textbook (pages 27-29) in pairs, discussing the key concepts of temperature and time.

Lesson Development (30 minutes):

Step 1: Define Temperature and Time

- In groups, students will define the terms temperature and time using their own words.
- Encourage students to write down their definitions and share them with the class.

Step 2: Identify SI Units

- Students will learn about the SI units of temperature (Kelvin) and time (seconds).
- Ask each group to present their findings and write them on the board for all to see.

Step 3: Instruments Used for Measurement

- Engage students in a discussion about the instruments that can be used to measure temperature (thermometers) and time (stopwatches).
- Show images or the actual instruments if available, and demonstrate their use.

Step 4: Practical Activities

- Divide students into pairs. Each pair will use a thermometer to measure the temperature of a safe substance (like water) and use a stopwatch to time how long it takes to fill up a container with that substance.
- Encourage students to record their results and discuss as a group how these instruments helped them measure.

Conclusion (5 minutes):

- Summarize key points learned in the lesson about temperature, time, and their measurements.
- Conduct a brief interactive quiz using questions related to the measurement of temperature and time.

- Preview the next session: “What is mass and how do we measure it?”

Extended Activities:

- Research Task: Learners can research different temperature and time measuring devices used in various professions (like chefs, meteorologists, and scientists) and present their findings in the next class.
- Class Experiment: Plan a simple experiment to observe how temperature affects the state of different substances (solid, liquid, gas) using an ice cube and a heating source.
- Simulation Game: Use digital devices to explore online simulations that show the effects of temperature changes on different materials and substances.

Teacher Self-Evaluation:

WEEK 4: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Define the terms: electric current, luminous intensity, and amount of substance.
2. Identify the SI units of electric current, luminous intensity, and amount of substance.
3. Carry out practical activities on the measurement of electric current.
4. Apply the SI unit to determine electric current flowing in a closed circuit.

Key Inquiry Question(s):

- What are the SI units of electric current, luminous intensity, and amount of substance?

Learning Resources:

- Active Integrated Science, pages 29-30
- Requirements for practical activities
- Digital devices (tablets/laptops)

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson on basic electrical concepts.
- Guide learners to read and discuss relevant sections from pages 29-30 of the learning resource, focusing on definitions and the importance of the terms to be learned in this lesson.

Lesson Development (30 minutes):

Step 1: Define the Terms

- In small groups, ask students to define:
- Electric Current: The flow of electric charge in a circuit.
- Luminous Intensity: The amount of light emitted by a source in a particular direction.
- Amount of Substance: Quantity of matter measured in moles.
- Share definitions with the class and write them on the board for clarification.

Step 2: Identify SI Units

- Lead a class discussion to identify the SI units:
- Electric Current (I): Ampere (A)
- Luminous Intensity (I_v): Candela (cd)
- Amount of Substance (n): Mole (mol)
- Have students create a simple chart in their notebooks that includes the term, definition, and SI unit.

Step 3: Practical Activity

- Set up a simple circuit using a battery, wires, and a resistor.
- Task students with measuring the electric current (in Amperes) flowing through the circuit using a multimeter.
- Ensure students take turns measuring and understand how to read the multimeter correctly.

Step 4: Application of SI Units

- Once the measurements are done, bring the class back together and ask students to discuss their findings.
- Have them present their measured currents and relate their findings back to the SI unit they identified earlier.

Conclusion (5 minutes):

- Summarize the key points: definitions, SI units, and results from the practical activity.
- Conduct an interactive group quiz using clickers or a digital platform to reinforce the main topics discussed.
- Preview next session's topic on voltage and resistance, posing the question: "How do voltage and resistance affect electric current?"

Extended Activities:

- Research Project: Assign students to look into different laboratory instruments used in measuring electric current, luminous intensity, and amount of substance and present their findings in the next class.
- Simulation Tools: Utilize online simulations (like PhET) that allow students to manipulate electrical circuits and observe the effects of changing various parameters on electric current.

Teacher Self-Evaluation:

WEEK 4: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Define length as a basic quantity.
2. Identify the SI unit of length (meter).
3. Carry out activities to measure length and present their findings in SI units.
4. Enjoy measuring the lengths of various substances.

Key Inquiry Question:

- What is length?

Learning Resources:

- Lesson notes
- Measuring instruments (ruler, meter stick, tape measure)
- Active Integrated Science textbook, pages 25-27

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on scientific measurements.
- Present the key inquiry question: "What is length?"

- Guide learners to read and discuss the relevant content from the provided resources, focusing on defining length and its significance in scientific measurement.

Lesson Development (30 minutes):

Step 1: Understanding Length

- Activity: In small groups, learners brainstorm what they think length means.
- Discussion: Each group shares their definitions; the teacher guides them toward a clear understanding of length as a basic quantity in scientific measurements.

Step 2: SI Units of Length

- Instruction: Discuss the International System of Units (SI) and focus on the meter as the standard unit of length.
- Task: Groups list various lengths they encounter in daily life, converting them into meters where applicable.

Step 3: Measuring Instruments

- Exploration: Introduce different measuring instruments (ruler, tape measure, meter stick).
- Demonstration: Show how to use each tool effectively to measure length accurately.

Step 4: Practical Measurement Activity

- Hands-on Task: Learners select different items around the classroom or schoolyard to measure (e.g., desks, books, playground equipment).
- Data Collection: Each group measures their items and records the lengths in meters.
- Sharing Results: Groups present their findings to the class, discussing the importance of accuracy in measurement.

Conclusion (5 minutes):

- Summarize the key points: definition of length, SI unit as meter, and the instruments used for measurement.
- Conduct a brief interactive quiz, asking questions related to the day's findings to reinforce learning.
- Preview the next lesson on measuring other dimensions (area and volume) and present intriguing questions about these concepts.

Extended Activities:

- Length Scavenger Hunt: Have students measure various objects at home and create a chart comparing the lengths in meters and other units.
- Create a Measurement Diary: Students track and record the lengths of objects they encounter throughout the week, converting and expressing these lengths in SI units.
- Research Project: Explore the history of units of measurement and how the meter was established, culminating in a presentation.

Teacher Self-Evaluation:

WEEK 4: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Instruments and Apparatus

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Define mass as a basic quantity.
2. Identify the SI unit of mass.
3. Carry out practical activities to measure the mass of different substances.
4. Enjoy conducting the practical activities.

Key Inquiry Questions:

- What is mass?
- What is the SI unit of mass?

Learning Resources:

- Lesson notes
- Electronic balance
- Active Integrated Science textbook (pg 27-28)
- Different substances (e.g. small weights, fruit, classroom items)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson: Briefly recap any relevant concepts learned about measurements and units.
- Guide learners to read and discuss relevant content from the learning resources, focusing on mass. Ask guiding questions to encourage discussion.

Lesson Development (30 minutes):

Step 1: Understanding Mass

- In pairs, students will brainstorm on the meaning of mass. They will list their ideas on a flip chart or whiteboard.
- The teacher will circulate, prompting deeper understanding and directing students towards the correct definition of mass.

Step 2: Identifying the SI Unit of Mass

- Groups will discuss and identify the SI unit of mass, which is the kilogram (kg).
- Students will share their findings, with the teacher clarifying and summarizing this key concept.

Step 3: Instruments to Measure Mass

- Together, as a class, brainstorm a list of instruments used to measure mass (e.g. electronic balance, scales).
- The teacher will ensure all major instruments are mentioned and understood, highlighting the use of an electronic balance for precise measurements.

Step 4: Practical Activity

- Students will conduct a hands-on activity using an electronic balance to measure the mass of various substances.
- They will record their measurements in the SI unit (kilograms or grams) and share their results with the class. The teacher will oversee the activity and assist with any questions.

Conclusion (5 minutes):

- Summarize key points: recap the definition of mass, the SI unit of mass, and the instruments used.
- Conduct a brief interactive activity, such as a quick quiz or a 'mass challenge' where students can guess the mass of common classroom items and check their guesses using the balance.
- Briefly discuss what will be covered in the next lesson, such as density or volume, encouraging students to consider how mass relates to these concepts.

Extended Activities:

- Mass Scavenger Hunt: Students can search for and measure the mass of various items at home, then create a presentation of their findings with visuals.
- Mass vs. Weight: Create a project comparing mass with weight to understand the difference and how they relate to each other.
- Research Project: Investigate an object with a unique mass (e.g., measuring cups in different units) and present findings to the class.

Teacher Self-Evaluation:

WEEK 4: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, the learner should be able to:

1. Identify the derived quantities used in science.
2. Identify the SI units of area, volume, and density.
3. Calculate the area of different materials in the class.
4. Determine the area of items using the SI units.

Key Inquiry Question(s):

- What is the SI unit of area, volume, and density?
- What are derived quantities in science?

Learning Resources:

- Active Integrated Science text (pg 30-31)
- Realia (real-world objects)
- Digital devices (tablets or computers for research)
- Metre rules and tape measures

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson: Ask students to recall what they learned about measurements in science.
- Guide learners to read and discuss relevant content from the learning resources (pg 30-31), emphasizing the understanding of key concepts, specifically derived quantities and their SI units.

Lesson Development (30 minutes):

Step 1: Brainstorming on Derived Quantities

- In pairs, students will brainstorm and write down what they think "derived quantities" mean.
- Encourage sharing ideas in a class discussion. Highlight examples like area, volume, and density.

Step 2: Identifying Derived Quantities and Their SI Units

- Present a list of derived quantities (area, volume, density) on the board.
- Discuss their meanings and clarify their SI units:
 - Area: square meter (m^2)
 - Volume: cubic meter (m^3)
 - Density: kilograms per cubic meter (kg/m^3)
- Students can refer to their textbooks and digital devices for additional information.

Step 3: Practical Activity: Measuring Area

- Divide students into small groups.
- Each group will use metre rules and tape measures to measure the dimensions of various classroom items or areas (like desks or the floor).
- Ensure students know how to convert their measurements into SI units.

Step 4: Calculating Area

- In their groups, students will apply the formula for area (length $\times$ width).

- They will calculate the area of the items they measured and present their findings to the class using the SI units.
- Focus on accuracy and correct use of units.

Conclusion (5 minutes):

- Summarize the key points discussed: derived quantities, SI units, and calculation of area.
- Engage students with an interactive quiz: Ask questions related to what they learned (e.g., "What is the SI unit for volume?").
- Preview the next session: "In our next lesson, we will explore volume and how to calculate it using different geometric shapes."

Extended Activities:

- Home Measurement Project: Ask students to measure areas of different rooms or spaces at home using SI units and report their findings.
- Density Experiment: Encourage students to conduct an experiment to calculate the density of various materials (like water, sand, etc.) using the formula $\text{density} = \text{mass}/\text{volume}$.
- Digital Research Task: Have students use digital devices to research other derived quantities, their applications, and present their findings in class.

Teacher Self-Evaluation:

WEEK 5: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Instruments and Apparatus

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Define density as a derived quantity and identify its SI unit.
2. Carry out practical activities to determine density from basic quantities.
3. Enjoy determining the density of different objects using its SI unit.

Key Inquiry Questions:

- What is the SI unit of density?
- How do you calculate density?

Learning Resources:

- Active Integrated Science, pages 32-33.

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson on matter and its physical properties.
- Encourage students to share what they remember about mass and volume.
- Guide learners to read and discuss the relevant content from the textbook, focusing on the concepts of density and its applications.

Lesson Development (30 minutes):

Step 1: Understanding Density

- Activity: In small groups, ask students to brainstorm the meaning of density and come up with a definition using their own words.
- Discussion: Share group definitions and lead a discussion to refine and finalize the definition of density as a derived quantity.

Step 2: Identifying SI Units

- Mini-Lecture: Explain that the SI unit of density is kilograms per cubic meter (kg/m^3), but it is often expressed in grams per cubic centimeter (g/cm^3) in smaller volumes.
- Activity: Have students create a simple chart comparing g/cm^3 and kg/m^3 to understand the conversion between these two measurements.

Step 3: Practical Measurement of Density

- Activity: Each student will measure the mass and volume of a block of wood using a scale and a graduated cylinder or ruler.
- Calculation: Demonstrate how to apply the formula for density: $\text{Density} = \text{Mass} / \text{Volume}$. Students will then calculate the density of their wooden block.

Step 4: Unit Conversion Practice

- Exercise: Provide students with a series of examples where they must convert density values between g/cm^3 and kg/m^3 .
- Independent Work: Allow students to practice on their own and assist them as needed.

Conclusion (5 minutes):

- Summarize the key points covered: the definition of density, its SI unit, how to measure and calculate density, and the importance of unit conversion.

- Conduct a brief interactive quiz or game related to density to reinforce the learning objectives from today's lesson.
- Preview the next session, which will cover buoyancy and how density relates to floating and sinking.

Extended Activities:

- Experiment at Home: Ask students to find different objects around their homes (like a metal spoon, a plastic cup, or a rock) and determine their densities by measuring mass and volume.
- Research Assignment: Assign students to research and present on the density of various liquids and how they compare to water.
- Interactive Density Lab: Set up a classroom station where students can experiment with layering liquids of different densities.

Teacher Self-Evaluation:

WEEK 5: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub-Strand: Laboratory Instruments and Apparatus

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Define the term volume as a derived quantity.
2. Identify the formula for calculating the volume of different objects.
3. Carry out practical activities to determine the volume of different objects.
4. Enjoy determining the volume of different objects in the school.

Key Inquiry Question:

- How do you calculate the volume of different objects?

Learning Resources:

- Active Integrated Science pg 31
- Lesson notes
- Carton boxes
- Rulers and metre rules

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson by asking students about derived quantities and their applications.

- Introduce the concept of volume by discussing what children think it means and how it can be measured.

Lesson Development (30 minutes):

Step 1: Understanding Volume

- Activity: In groups, learners will brainstorm and discuss the meaning of volume.
- Guidance: Ask prompting questions such as, "What do you think volume measures?"
- Outcome: Learners should come to a consensus that volume refers to how much space an object occupies.

Step 2: Identifying the Formula for Volume

- Instruction: Present the formula for calculating the volume of various shapes (e.g., Cube: $V = \text{side} \times \text{side} \times \text{side}$; Rectangular Prism: $V = \text{length} \times \text{width} \times \text{height}$).
- Group Work: Each group can identify the appropriate formula for their chosen shape (e.g., carton boxes) and present it to the class.
- Outcome: Learners identify the SI unit of volume (cubic meters or liters).

Step 3: Measuring Volume Practically

- Activity: Give each group a carton box, rulers, and metre rules.
- Task: Instruct students to measure the dimensions of the box and calculate its volume using the formula they identified.
- Outcome: Learners accurately apply the formula and report their findings.

Step 4: Applying Knowledge Outside

- Outdoor Activity: Challenge groups to find other objects around the school and calculate their volume using similar methods.
- Outcome: Encourage students to collaborate and have fun while applying their knowledge in a real-world context.

Conclusion (5 minutes):

- Summary: Review the definitions, formulas, and practical applications discussed during the lesson.
- Interactive Activity: Conduct a quick quiz or game where students must match objects to their volumes or correct formulas.
- Preparation for Next Session: Briefly introduce the next topic (e.g., how different materials affect volume) and pose an open-ended question for them to ponder.

Extended Activities:

- Volume Scavenger Hunt: Organize a classroom or school-wide scavenger hunt where students find various objects and record their volumes.
- Create a Poster: Ask students to create a poster showing various objects' volume calculations and their applications in real life.
- Model Making: Have learners use clay or other materials to create 3D models of different shapes and calculate their volumes.

Teacher Self-Evaluation:

WEEK 5: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Define speed as a derived quantity in science.
2. Identify the SI unit of speed and formula for calculating speed in science.
3. Carry out practical activities to determine speed from the basic units.
4. Acknowledge speed as one of the derived quantities in science.

Key Inquiry Questions:

- What is speed?
- What is the SI unit of speed?

Learning Resources:

- Lesson notes
- Surveyor's tape measure
- Stopwatches
- School field

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson about motion.
- Introduce the concept of speed, guiding learners to read and discuss the relevant content from the lesson notes and emphasize the understanding of the key concepts.

Lesson Development (30 minutes):

Step 1: What is Speed?

- Group Discussion: Divide learners into small groups. Encourage them to brainstorm and share their understanding of speed. Ask guiding questions to help them articulate their thoughts on what speed is.

Step 2: Identifying the SI Unit of Speed

- Mini Lecture: Explain that speed is measured in meters per second (m/s) in the SI unit system. Use examples to illustrate its practical implications, such as running speed or vehicle speed.

Step 3: Formula for Calculating Speed

- Group Activity: Introduce the formula for speed:

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

Provide learners with sample problems to solve in their groups, using real-world examples where they calculate speed.

Step 4: Practical Application

- Conduct a Measurement Activity: Take the class outside to the school field. Using the tape measure, set a specific distance (e.g., 50 meters). Assign some students to run the distance while others use stopwatches to record the time taken. After data collection, have groups calculate the speed of their classmates.

Conclusion (5 minutes):

- Summarize the key points covered during the lesson, reiterating the definition of speed, the SI unit, and the speed formula.

- Conduct a brief interactive quiz to review the main topics, encouraging students to answer questions about speed and its calculations.
- Preview the next lesson, introducing basic concepts of acceleration and how it relates to speed.

Extended Activities:

- Homework Assignment: Ask students to research a sport or activity where speed is crucial (like sprinting, cycling, etc.) and write a short paragraph discussing how speed is measured and why it is important in that context.
- Classroom Challenge: Organize a speed challenge where students can time themselves in various activities (running, biking) and compare the results with their peers, applying their knowledge of how to calculate speed.

Teacher Self-Evaluation:

WEEK 5: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Instruments and Apparatus

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Collect packaging labels of different products and study them.
2. Identify the information found on the packaging materials of each product.
3. Appreciate the information that packaging materials provide about different products.

Key Inquiry Question:

- What type of information is contained on the packaging materials of different products?

Learning Resources:

- Active Integrated Science textbook (pages 33-34)
- Packaging materials of various products (bread, salt, yoghurt, Colgate toothpaste, maize and wheat flour)
- Pictures of packaging materials

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson on scientific investigation.
- Ask students questions to re-engage them, such as "What is the purpose of packaging?"

- Introduce today's topic and explain how packaging labels contain important information about products.

Lesson Development (30 minutes):

Step 1: Brainstorming Labels

- Organize students into small groups.
- Ask each group to brainstorm what they think a packaging label includes (e.g., ingredients, instructions, nutritional information).
- Have them share their ideas with the class.

Step 2: Collecting Labels

- In pairs, students will collect packaging labels from the selected products brought in (e.g., bread, juice, soap).
- Ensure that each pair has a variety of labels for better analysis.

Step 3: Studying the Information

- Students will study the information on their collected labels.
- They should identify essential details like expiration dates, nutritional information, and manufacturer info.
- Ask them to take notes on the different types of information they observed.

Step 4: Sharing Findings

- Each pair will present one product label to the class, sharing what they found and its significance.
- Encourage classmates to ask questions and make observations based on what was shared.

Conclusion (5 minutes):

- Summarize the key points covered in the lesson: the importance of packaging labels and the types of information they provide.
- Conduct a quick interactive activity, such as a quiz or a fun fact sharing about a specific product's packaging.
- Preview the next session by asking students what they think we'll explore next in relation to scientific investigation and packaging.

Extended Activities:

- Project Idea: Ask students to create their own product, designing a packaging label that includes all necessary information they learned in class.
- Field Trip: If possible, organize a trip to a local store where students can analyze real products and their packaging.
- Research Assignment: Students could choose a specific product, research its environmental impact, and present their findings, including how packaging plays a role in this.

Teacher Self-Evaluation:

WEEK 5: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, the learner should be able to:

1. State the importance of the information on packaging materials of products.
2. Discuss the importance of the information on packaging materials of products.
3. Use digital or print resources to search for information on the importance of the information found on packaging materials of products.
4. Develop a habit of checking the information on the packaging materials of products.

Key Inquiry Question:

What is the importance of the information found on packaging materials of products?

Learning Resources:

- Lesson notes
- Digital devices (tablets/laptops)
- Posters
- Active Integrated Science pg 34

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson by asking students about what they learned and how it relates to packaging.
- Guide learners to read and discuss relevant content from the learning resources, focusing on understanding key concepts about packaging information.

Lesson Development (30 minutes):

Step 1: Brainstorming

- In groups or pairs, students brainstorm the types of information found on product packaging (e.g., ingredients, nutritional facts, safety warnings).
- Each group writes their ideas on a flip chart or whiteboard.

Step 2: Discussion

- Discuss as a class the importance of this information. What can happen if people ignore the packaging details?
- Encourage students to think about health, safety, and making informed choices.

Step 3: Research

- Using digital devices or textbooks, students search for additional information on the importance of packaging details.
- Each group summarizes their findings and prepares to share with the class.

Step 4: Create Educational Posters

- Groups prepare educational posters that highlight the importance of packaging information.
- These posters should be visually appealing and include key points from their discussions and research.

Conclusion (5 minutes):

- Summarize key points discussed in class, reinforcing the learning objectives achieved.

- Conduct a brief interactive quiz where students point out which information is crucial from sample packaging—this reinforces the main topics in a fun way.
- Preview upcoming topics, encouraging students to observe packaging information in their daily lives before the next lesson.

Extended Activities:

- Research Project: Assign students to select a product of their choice, research its packaging information, and present their findings to the class.
- Field Trip: Plan a visit to a local grocery store or manufacturer to explore packaging firsthand, noting the information presented and its significance.
- Packaging Redesign: Challenge students to redesign a product's packaging, ensuring that all critical information is included and clearly presented.

Teacher Self-Evaluation:

WEEK 6: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments Assessment 1:

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Attempt the assessment questions related to laboratory apparatus and instruments.

Key Inquiry Questions:

- What are the different types of laboratory apparatus and their uses?
- How do we choose the right instrument for a scientific investigation?

Learning Resources:

- Active Integrated Science pg 36-37
- Teacher's Written Questions

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson, recapping any key concepts learned about scientific investigation.
- Read sections from Active Integrated Science, pages 36-37, as a class, prompting students to discuss and reflect on the key concepts about laboratory apparatus and instruments.

Lesson Development (30 minutes):

Step 1: Identify Apparatus

- Divide students into pairs and ask them to list as many types of laboratory instruments as they can remember from the reading. Each pair will share their lists with the class.

Step 2: Discuss Uses

- Guide students to choose a few types of apparatus from their lists and discuss their specific uses in experiments. Encourage pairs to prepare a short explanation for one instrument to present to the class.

Step 3: Assessment Preparation

- Distribute the assessment questions. Allow learners a few minutes to review them. Give students time to ask questions to clarify any uncertainties about the apparatus or the type of questions they will be answering.

Step 4: Attempt Assessment Questions

- Instruct the students to independently attempt the assessment questions, utilizing the knowledge gained from the reading and discussions. Monitor progress and provide support as needed.

Conclusion (5 minutes):

- Summarize key points discussed during the lesson, reiterating the importance of choosing the correct laboratory instruments for various experiments.
- Conduct a brief interactive quiz or game where students match instruments to their uses to reinforce learning.
- Preview upcoming topics such as lab safety or measurement techniques in the next session and encourage students to think about questions they may have.

Extended Activities:

- Laboratory Scavenger Hunt: Create a list of laboratory instruments for students to find in your actual lab or in pictures. They can research their functions.

- Create a Brochure: Have students design a brochure for new students that illustrates common laboratory apparatus, explaining their uses and safety tips for each.
- Experiment Planning: Encourage learners to plan a simple experiment they could conduct using specific laboratory instruments. They should outline the equipment needed and the process involved.

Teacher Self-Evaluation:

WEEK 6: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments (a) Heating Apparatus

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. List the apparatus and instruments used for heating in a laboratory.
2. Identify the parts of the Bunsen burner as one of the heating instruments.
3. Draw and label the parts of the Bunsen burner.
4. Appreciate the instruments and apparatus used for heating purposes.

Key Inquiry Question(s):

- Which apparatus or instruments are used for heating purposes in the laboratory?

Learning Resources:

- Digital devices
- Active Integrated Science textbook (pg. 38-40)
- Bunsen burners (real or models)
- Charts and posters
- Video clips demonstrating heating apparatus
- Pictures of heating instruments

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson on laboratory safety or types of laboratory equipment.
- Introduce the day's topic on heating apparatus and invite learners to share what they know about heating in the lab.
- Guide students to discuss relevant passages from the textbook, focusing on the significance of heating apparatus.

Lesson Development (30 minutes):

Step 1: Video Exploration

- Show a video clip that outlines the various heating apparatus used in laboratories. Ask students to take notes on the different instruments they see.
- After the video, discuss the various instruments depicted, ensuring students understand their purposes.

Step 2: Observations and Identification

- Present pictures or real examples of a Bunsen burner and other heating instruments.
- In pairs, have learners identify key components of the Bunsen burner using the visuals. Encourage discussion about why each part is essential for its function.

Step 3: Drawing and Labeling

- Distribute paper or have learners use digital devices to draw the Bunsen burner.
- Instruct them to label the parts based on their observations and discussions. This includes elements such as the gas inlet, air holes, barrel, and base.

Step 4: Group Reflection

- Bring the class together to share their drawings and labels. Conduct a peer review where groups can discuss any differences in their drawings and reasoning.
- Emphasize the importance of each part of the Bunsen burner in the heating process and its application in experiments.

Conclusion (5 minutes):

- Summarize the key points discussed about heating apparatus, with a focus on the Bunsen burner.
- Engage the class in a brief interactive quiz or game related to the heating instruments learned.
- Preview the next session on safety practices when using heating apparatus in the laboratory.

Extended Activities:

- Research Assignment: Students can choose a heating apparatus not covered in class (like hot plates or ovens) and prepare a brief presentation about its uses and importance in scientific investigations.
- Safety Poster: Create a poster that highlights safety precautions when using heating devices in the lab. These can be displayed in the classroom after completion.
- Lab Experiment: Plan a simple experiment using a Bunsen burner or a similar heating device, following safety protocols. Students can record their observations and results.

Teacher Self-Evaluation:

WEEK 6: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments (a) – Apparatus used for heating purposes.

Specific Learning Outcomes:

- By the end of the lesson, the learner should be able to:

1. State the functions of the parts of the Bunsen burner.
2. Discuss the two types of flames produced by a Bunsen burner.
3. Carry out a simple practical activity on heating using the Bunsen burner.
4. Observe safety when using heating instruments in the laboratory.

Key Inquiry Questions:

- What are the functions of the parts of the Bunsen burner?
- What is the difference between luminous and non-luminous flames?

Learning Resources:

- Digital devices
- Active Integrated Science (pg 41-42)
- Beakers and water
- Stop watches
- Matchbox
- Wire gauze and tripod stand
- Bunsen burners

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson by asking students what they remember about laboratory safety and heating equipment.
- Guide learners to read and discuss relevant content from the learning resources. Emphasize key concepts about Bunsen burners and their operation.

Lesson Development (30 minutes):**Step 1: Identify Parts of the Bunsen Burner**

- In small groups, ask students to list the different parts of a Bunsen burner (e.g., base, gas inlet, air holes, barrel, and collar).
- Each group shares their findings, and the teacher highlights the functions of each part, fostering understanding of how the burner operates.

Step 2: Types of Flames Discussion

- Introduce the two types of flames: luminous (yellow flame) and non-luminous (blue flame).
- Ask pairs to discuss and note the characteristics of each flame type (e.g., color, heat output).
- Share as a class and clarify differences while emphasizing when and why each flame is used in experiments.

Step 3: Practical Activity Setup

- Demonstrate the proper setup for using a Bunsen burner safely. Show how to connect it to a gas supply and adjust the collar for flame types.
- Distribute beakers of water, wire gauze, and other materials, ensuring students understand how to set up their workspace.

Step 4: Conducting the Heating Activity

- Students conduct the practical activity: heating water with both flame types. They should start timers and record the time taken to heat the water to a specific temperature.
- Monitor safety precautions, ensuring all students are careful with the Bunsen burners.

Conclusion (5 minutes):

- Summarize the key points covered in the lesson, including the functions of the Bunsen burner parts and the differences between flame types.
- Conduct a brief interactive activity, such as a quick quiz or a hands-on demonstration, to reinforce what they learned.
- Prepare learners for the next session by previewing upcoming topics and inviting them to think about how flame impacts various chemical reactions.

Extended Activities:

- Research Assignment: Ask students to find out more about other heating apparatus, such as hot plates or torches, and compare their uses with the Bunsen burner.
- Safety Poster Creation: In groups, students can create a safety poster that illustrates the safe use of a Bunsen burner, which can be displayed in the classroom.
- Flame Test Experiment: If resources allow, students can conduct a flame test to learn how different elements produce distinctive colors in a flame, linking chemistry and physics.

Teacher Self-Evaluation:

WEEK 6: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments (b) Instruments Used to Measure: Mass and Weight

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Identify the instruments used to measure mass and weight.
2. Carry out simple practical activities using instruments to measure mass and weight.
3. Appreciate the uses of the instruments used in measuring mass and weight.

Key Inquiry Question(s):

- Which instruments are used to measure mass and weight?

Learning Resources:

- Spring balance
- Electronic balance
- Digital devices
- Active Integrated Science (pg 43)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson by asking students to recall what they learned about measuring different physical quantities.

- Guide learners to read and discuss relevant content from the learning resources, emphasizing the understanding of mass and weight, and the instruments used for their measurement.

Lesson Development (30 minutes):

Step 1: Introduction to Instruments

- Show the spring balance and electronic balance to the class. Discuss how each instrument is used to measure mass and weight.
- Highlight the difference between mass (measured in grams or kilograms) and weight (measured in newtons).

Step 2: Group Discussion

- Divide the class into small groups. Have each group discuss their observations about when and why they would use one instrument over the other.
- Encourage them to think about situations where precise measurements of mass or weight are important.

Step 3: Practical Activity

- Give each group a spring balance and an electronic balance (if available). Ask them to measure the mass of various classroom items (like a book, a pencil, or a water bottle).
- Instruct them to record their observations, comparing the measurements from both instruments.

Step 4: Share Observations

- Bring the class back together and invite one representative from each group to share their findings.
- Facilitate a discussion on any discrepancies between the measurements and what might account for them (e.g., scales being calibrated differently).

Conclusion (5 minutes):

- Summarize the key points discussed, focusing on the instruments used, their purpose, and the difference between mass and weight.
- Conduct a brief interactive quiz or game using questions from the lesson to reinforce the main topics.
- Prepare learners for the next session by previewing an upcoming topic, such as "The Concept of Density."

Extended Activities:

- Homework Assignment: Have students research a real-world application of measuring mass and weight in professions such as medicine, engineering, or cooking. They can present their findings in the next class.
- Class Project: Create a "Measurement Station" in the classroom where students can bring in items from home to measure with different instruments throughout the week.

Teacher Self-Evaluation:

WEEK 6: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub-Strand: Laboratory Apparatus and Instruments (c) - Instruments Used to Measure Length

Specific Learning Outcomes:

- By the end of the lesson, the learner should be able to:

1. Identify the instruments used to measure length.
2. Carry out practical activities to measure length using the identified instruments.
3. Appreciate the uses of the different instruments used to measure length.

Key Inquiry Question(s):

- Which instruments are used in measuring length?

Learning Resources:

- 30 cm ruler
- Metre rule
- Tape measures
- Active Integrated Science (pages 45-46)
- Digital devices

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson, asking students to recall any key points related to measurements in science.

- Guide learners in reading and discussing the relevant sections from their textbooks (Active Integrated Science) that explain the concept of measuring length and the different instruments involved. Highlight the importance of accurate measurements in scientific investigation.

Lesson Development (30 minutes):

Step 1: Introduction to Measuring Instruments

- Present different instruments used to measure length: ruler, metre rule, and tape measure.
- Show students how each instrument is used and discuss scenarios in which they would use each type. For example, when measuring a small object, the ruler is suitable, but for larger distances, a tape measure is better.

Step 2: Group Activity - Identifying Instruments

- Divide students into small groups.
- Provide each group with a set of measuring instruments (ruler, metre rule, tape measure) and ask them to observe and identify the features of each tool.
- Have each group present their findings on what they learned about the instruments to the class, including what they noticed about the accuracy and ease of use.

Step 3: Hands-On Measuring Activity

- In pairs, students will select one of the measuring instruments and measure a specific object in the classroom (e.g., a desk or a book). They should record their findings in their notebooks. Encourage them to compare measurements taken with different instruments if time allows.

Step 4: Sharing Observations and Reflection

- Gather students back as a whole class and ask them to share their measurements and reflections on using different instruments.
- Discuss any challenges they faced during measuring and which instrument they found easiest to use and why.

Conclusion (5 minutes):

- Summarize key points from the lesson, including the different instruments used to measure length and their applications.
- Conduct a brief interactive activity, such as a quick quiz or a game where they match instruments to their uses.
- Prepare students for the next session by introducing the topic of 'Measurement Units' and posing questions like "Why do we need different units to measure length?"

Extended Activities:

- Measuring Scavenger Hunt: Ask students to find various items in their home or school that are different lengths and measure them. They can create a mini-report about their findings, discussing which instruments they used for each measurement.
- DIY Measuring Tool Project: Encourage students to design their own measuring tool using craft materials and test its accuracy by comparing it with standard measuring instruments.

Teacher Self-Evaluation:

WEEK 7: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Identify the instruments used for measuring temperature.
2. Conduct simple activities to identify the instrument used to measure temperature in the laboratory.
3. Appreciate the use of instruments used to measure temperature.

Key Inquiry Question:

- Which instruments are used to measure temperature?

Learning Resources:

- Active Integrated Science textbook, pages 43-44
- Thermometers
- Beakers
- Water
- Bunsen burner
- Wire gauze
- Matchbox

Organization of Learning:

Introduction (5 minutes):

- Begin the lesson by reviewing key points from the previous lesson on laboratory safety and the importance of accurate measurements in experiments.
- Ask students to think about and share any temperature-related activities they might have encountered (e.g., weather reports, cooking).
- Guide learners to open the learning resources and read relevant content on temperature measurement instruments, emphasizing understanding the key concepts.

Lesson Development (30 minutes):**Step 1:** Introduction to Temperature Measurement

- Discuss the concept of temperature and its significance in scientific experiments.
- Introduce different types of thermometers (e.g., liquid-in-glass, digital, infrared) and their uses.
- Show students each thermometer and discuss how they work.

Step 2: Group Activity - Identification of Instruments

- Divide students into small groups and provide each group with a variety of temperature-measuring instruments.
- Ask groups to identify each instrument and discuss its specific use in the laboratory.
- Encourage students to create a quick chart to compare the instruments' features, rates of accuracy, and uses.

Step 3: Simple Activity - Measuring Temperature

- Have each group conduct a simple experiment using thermometers to measure the temperature of water before and after heating it over a Bunsen burner.
- Students will record their observations in terms of temperature readings and discuss the results within their groups.

Step 4: Class Discussion

- Reconvene as a class and ask each group to share their findings and observations.
- Facilitate a discussion about the different measurements and outcomes based on the thermometers used, emphasizing reliability and accuracy.

Conclusion (5 minutes):

- Summarize the key points discussed regarding instruments for measuring temperature and their importance.
- Reinforce the learning objectives by asking questions for students to respond to, encouraging them to think about temperature measurement's practical applications.
- Prepare students for the next lesson by giving a brief preview of how temperature affects states of matter.

Extended Activities:

- Research Assignment: Ask students to research the history of temperature measurement and create a timeline illustrating significant developments.
- Temperature in Daily Life: Have students keep a temperature diary for a week, recording the temperature at different times of day and discussing how it affects their daily activities.
- Creative Project: Challenge students to create a poster that showcases different temperature measurement instruments and includes interesting facts about each.

Teacher Self-Evaluation:

WEEK 7: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Instruments and Apparatus

Specific Learning Outcomes:

- By the end of the lesson, the learner should be able to:

1. Identify the instruments used to measure time.
2. Carry out activities to measure time using the identified instruments.
3. Enjoy carrying out the activities on instruments used to measure time.

Key Inquiry Question:

- Which instruments are used to measure time?

Learning Resources:

- Stopwatches
- Digital wristwatches
- School field (for activities)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson by discussing what learners know about measurements in science, focusing on time.
- Introduce the instruments that are commonly used to measure time and encourage students to share their experiences with these tools.

Lesson Development (30 minutes):

Step 1: Identification of Instruments

- In groups of 3-4, learners will discuss and list the instruments they know that can be used to measure time (e.g., stopwatches, digital wristwatches).
- Each group will share their findings with the class to compile a master list on the board.

Step 2: Demonstration of Instruments

- The teacher will demonstrate how to use a stopwatch and digital wristwatch, explaining the features and functionalities of each instrument.
- Highlight the importance of accuracy and how each instrument is suited for different scenarios.

Step 3: Practical Activity

- Each group will go outside to the school field with a stopwatch and a digital wristwatch.
- They will conduct a time-measuring activity, such as timing how long it takes for a ball to roll a certain distance or how long it takes for a classmate to run a set distance.
- Each group will record their observations and results.

Step 4: Reflection and Discussion

- Back in class, each group will present their activity results and consider any challenges they faced.
- Encourage questions and discussion about which instrument they preferred for the activity and why.

Conclusion (5 minutes):

- Summarize the key points learned about the different instruments used to measure time and the activities conducted.
- Conduct a brief interactive quiz or game (e.g., "Time Measurement Jeopardy") to reinforce the main topics.

- Prepare learners for the next session by previewing topics such as how time measurement is used in science and daily life.

Extended Activities:

- Design a Time Measurement Challenge: Students can create a challenge where they time different activities (e.g., how long it takes to complete a puzzle, read a book, etc.) and share their findings with the class.
- Research Project: Have students research historical methods of time measurement (like sundials or hourglasses) and present their findings in class.

Teacher Self-Evaluation:

WEEK 7: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Identify the instruments used to measure volumes of substances in the laboratory.
2. Draw the instruments used to measure volumes of substances in the laboratory.
3. Conduct simple activities to measure volumes of substances in the laboratory.
4. Acknowledge the uses of the different instruments used to measure volume of substances.

Key Inquiry Question:

- Which instruments are used to measure volume in the laboratory?

Learning Resources:

- Active Integrated Science, pages 46-48
- Graduated beakers, measuring cylinders, syringes, volumetric flasks
- Water

Organisation of Learning:

Introduction (5 minutes):

- Start by reviewing the previous lesson on mixtures and solutions.
- Ask students what they remember about solid and liquid measurements.

- Guide students to read and discuss the relevant content from the textbook, focusing on the instruments introduced.

Lesson Development (30 minutes):

Step 1: Identification of Instruments

- Divide students into small groups.
- Provide each group with pictures and real examples of the measuring instruments (beakers, measuring cylinders, syringes, volumetric flasks).
- Ask each group to identify and name the instruments collectively.

Step 2: Drawing Instruments

- Instruct the groups to take turns drawing each instrument they identified on chart paper.
- Encourage them to label each drawing with its name and purpose.

Step 3: Measuring Activities

- Provide each group with a graduated beaker, measuring cylinder, and water.
- Guide them to conduct a simple activity where they measure out a specific volume (e.g., 100 mL) using each instrument while noting any differences they observe.

Step 4: Sharing Findings

- Have each group share what they observed during the measuring activity and discuss how accurate each instrument is for different volumes.
- Wrap up this segment by highlighting the significance of accuracy in science experiments.

Conclusion (5 minutes):

- Summarize the key points: the names of the instruments, their purpose, and how to use them.
- Conduct a brief interactive quiz, asking questions like "Which instrument would you use to measure 50 mL of liquid?"

- Preview the next session, hinting at more advanced measuring techniques and the concept of density.

Extended Activities:

- Home Assignment: Ask students to choose one measuring instrument and research its uses in various scientific fields, preparing a short presentation for the class.
- Classroom Experiment: Conduct an experiment to compare the volume measurement of the same liquid using different instruments, discussing potential sources of error.

Teacher Self-Evaluation:

WEEK 7: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Identify the instruments used for magnification in the laboratory.
2. Draw and label the parts of the hand lens.
3. Carry out simple activities on magnification using the hand lens.
4. Appreciate the uses of magnification instruments in the laboratory.

Key Inquiry Questions:

- What is magnification?
- Which instruments are used for magnification in the laboratory?

Learning Resources:

- Active Integrated Science, pages 48-49
- Hand lens
- Pictures and charts of magnification instruments

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson about scientific investigation methods.

- Guide learners to read pages 48-49 from the Active Integrated Science textbook and discuss the key concepts of magnification, encouraging them to think critically about its application.

Lesson Development (30 minutes):

Step 1: Brainstorming on Magnification

- Divide the class into small groups.
- Each group discusses the meaning of "magnification," writing down their thoughts and ideas on a paper.
- After 5 minutes, groups share their definitions with the class.

Step 2: Identifying Magnification Instruments

- Still in their groups, learners will identify various instruments used for magnification (e.g., hand lens, microscope, etc.) based on the pictures and charts provided.
- Each group will create a list of these instruments and discuss their findings with the whole class.

Step 3: Drawing and Labeling the Hand Lens

- Distribute blank sheets of paper to each group.
- Instruct learners to draw a hand lens and label its key parts, such as the lens, handle, and any other relevant features.
- Groups will then display their drawings around the classroom and provide a brief explanation of their labeled parts.

Step 4: Hands-on Experiment with Hand Lens

- Provide each group with a hand lens and a few small objects (e.g., leaves, coins, or printed text).
- Groups will use the hand lens to magnify the objects and observe the differences. After observing, they will schrift their findings and how the magnification changed their perception of the objects.

Conclusion (5 minutes):

- Summarize the key points about magnification and the instruments used, reviewing the learning objectives achieved during the lesson.
- Conduct a brief interactive quiz, asking questions about what they learned specifically regarding the hand lens and other magnification tools.
- Preview upcoming topics related to light or optics, suggesting students consider the role of light in magnification for the next class.

Extended Activities:

- At Home Experiment: Learners can find different household items to observe using a hand lens and record how the appearance changes with magnification. They could present their findings in class for a shared learning opportunity.
- Research Activity: Each student can choose one magnification instrument (like a microscope) to research and prepare a short presentation on how it works and is used in real-world scientific investigations.

Teacher Self-Evaluation:

WEEK 7: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory apparatus and instruments (d) - Instruments used for magnification:
Light Microscope

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Identify the parts of the Light Microscope.
2. Draw and label the parts of a Light Microscope.
3. Enjoy drawing and labeling the parts of the Light Microscope.

Key Inquiry Questions:

- What is a specimen and aperture?
- What are the parts of the light microscope?

Learning Resources:

- Light Microscope (actual model or images)
- Active Integrated Science textbook (pg 49-50)
- Charts of Light Microscope parts
- Digital devices for video viewing

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on scientific investigation and microscopy.

- Guide learners to read and discuss relevant content from the resources to highlight the key concepts of specimens and apertures.

Lesson Development (30 minutes):

Step 1: Introduction to the Microscope

- Show a real Light Microscope or an image.
- Explain the function of the microscope and its importance in scientific observation.
- Discuss basic terms such as 'specimen' (the object being observed) and 'aperture' (the opening that controls how much light enters the microscope).

Step 2: Group Exploration

- Divide the class into small groups and provide each group with a Light Microscope or images.
- Instruct students to identify different parts of the microscope using the charts.
- Circulate among the groups to provide assistance and answer questions.

Step 3: Drawing and Labeling

- Ask students to take out their notebooks and draw the Light Microscope.
- Guide them in labeling the main parts: eyepiece, objective lenses, stage, light source, and base.

Step 4: Video Observation

- Present a short video clip that outlines the parts of the Light Microscope and their functions.
- After watching, have a brief discussion to reinforce learning.

Conclusion (5 minutes):

- Summarize the key points learned about the parts of the Light Microscope.
- Reinforce the importance of each part and its function.

- Conduct a brief interactive quiz or game where students can shout out parts of the microscope as you describe them.
- Prepare students for the next lesson by previewing how they will use microscopes to observe real specimens.

Extended Activities:

- Encourage students to find a small item at home (e.g., a leaf, fabric, or hair) and create a drawing of what they think it would look like under a microscope.
- Have students create a poster that highlights the parts of the Light Microscope and includes fun facts or uses for microscopes in real-life science.

Teacher Self-Evaluation:

WEEK 9: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, students will be able to:

1. State the functions of the parts of a light microscope.
2. Discuss the functions of the parts of a light microscope.
3. Use digital devices to search for and watch a clip on the parts of the light microscope and their functions.
4. Acknowledge the functions of the parts of the light microscope.

Key Inquiry Question(s):

- What are the functions of the different parts of the light microscope?

Learning Resources:

- Active Integrated Science pg 50-51: Light Microscope
- Digital devices
- Video clips on the parts and functions of the light microscope

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson to activate prior knowledge.

- Engage students in a discussion about microscopes. Ask guiding questions like: "What do you think a light microscope is used for?"
- Introduce the key concepts that will be covered in today's lesson.

Lesson Development (30 minutes):

Step 1: Group Formation & Introduction to Digital Resources

- Divide the class into small groups of 3-4 students.
- Introduce digital devices (tablets/laptops) and explain how to access video clips about the light microscope.
- Give clear instructions on what to search for: "Look for videos that explain different parts of a light microscope and their functions."

Step 2: Watching the Video Clips

- Allow time for each group to watch the selected video clips on their devices.
- After viewing, ask students to jot down important points regarding different parts of the microscope and their functions.

Step 3: Group Discussion

- Facilitate a group discussion where students share insights from the videos they watched.
- Encourage students to ask questions, clarify doubts, and have conversations about their findings.

Step 4: Creating a Chart

- Provide each group with paper and markers.
- Instruct groups to create a chart that lists the parts of the light microscope along with their respective functions.
- Ask each group to prepare to share their chart with the class.

Conclusion (5 minutes):

- Bring the class back together and summarize the key points discussed during the lesson.
- Conduct a brief interactive quiz where students can call out the functions of different parts of the microscope.
- Preview the next session by giving hints about upcoming topics, such as how to prepare microscope slides or different types of microscopy, prompting students to think about how microscopes are essential in scientific investigations.

Extended Activities:

- Microscope Exploration: Assign students to collect samples from their environment (like plant leaves or household items) and prepare a microscope slide to observe in the next class.
- Research Activity: Have students research different types of microscopes and their uses in various scientific fields (e.g., biology, medicine, and forensics) and present their findings in the next session.

Teacher Self-Evaluation:

WEEK 9: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments (e) Care of a Light Microscope

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Outline the ways of caring for a light microscope in the laboratory.
2. Discuss the importance of caring for a light microscope.
3. Research ways to care for a light microscope using digital devices.
4. Apply care procedures when handling a microscope.

Key Inquiry Question(s):

- How should you care for and handle the light microscope in the laboratory?

Learning Resources:

- Active Integrated Science textbook
- Lesson notes
- Digital devices
- Light Microscope

Organisation of Learning:

Introduction (5 minutes):

- Review Previous Lesson: Brief recap of what was learned in the last session (e.g., basic parts and functions of a microscope).

- Discussion: Guide learners to discuss the importance of microscopes in scientific investigations. Encourage sharing of prior knowledge on its care.

Lesson Development (30 minutes):

Step 1: Group Brainstorming

- Activity: In groups, students brainstorm and list ways to care for a light microscope. Encourage them to think about handling, cleaning, and storage.
- Outcome: Each group shares their thoughts, compiling a list on the board.

Step 2: Group Discussion

- Activity: Using the compiled list, each group discusses in detail how to implement these care practices in the laboratory.
- Outcome: Students make notes on best practices based on group discussions.

Step 3: Research Activity

- Activity: Students use digital devices to search for additional information on caring for light microscopes. Encourage them to look for videos or articles demonstrating proper techniques.
- Outcome: Groups refine their notes based on their findings.

Step 4: Creating Care Charts

- Activity: Groups create a chart that outlines the care procedures for a light microscope. Include headings like "Handling," "Cleaning," and "Storage."
- Outcome: Display the charts around the classroom for future reference and discussion.

Conclusion (5 minutes):

- Summarize: Highlight key caring practices for microscopes discussed during the lesson.
- Interactive Activity: Conduct a quick quiz or game (e.g., "Microscope Care Jeopardy") to reinforce the information learned.

- Preview Next Session: Briefly introduce the next topic (e.g., different types of microscopes) and pose a question for students to think about before the next class.

Extended Activities:

- Microscope Care Poster: Have students create a poster on the different ways to care for microscopes that could be displayed in the classroom or laboratory.
- Reflection Assignment: Write a short paragraph reflecting on why proper care of laboratory instruments is important and how it relates to scientific investigations.
- Microscope Maintenance Job Role-Play: Students role-play as lab technicians explaining to others the importance of caring for microscopes.

Teacher Self-Evaluation:

WEEK 9: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory apparatus and instruments (f). Other commonly used laboratory apparatus.

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Identify other apparatus and instruments used in the laboratory.
2. Discuss the uses of the identified apparatus and instruments.
3. Draw the apparatus and instruments on charts together with their uses.
4. Appreciate the uses of the apparatus and instruments.

Key Inquiry Question:

- Which are the other commonly used laboratory apparatus?

Learning Resources:

- Digital devices
- Pictures of laboratory apparatus
- Charts
- Active Integrated Science textbook (pg 52-56)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on laboratory safety and basic laboratory functions.

- Engage learners in a discussion of what they remember about laboratory apparatus using questions like: “What tools did you see last time?”
- Briefly read and discuss relevant content from the textbook, focusing on introducing additional laboratory apparatus.

Lesson Development (30 minutes):

Step 1: Observation and Identification

- Learners will be divided into small groups and given different images of laboratory apparatus such as graduated cylinders, petri dishes, beakers, and test tubes.
- Each group will take 5 minutes to observe the images and identify the names of the apparatus.

Step 2: Research and Discussion

- Using digital devices, learners will search for information about the identified apparatus, including their functions and when they are typically used in experiments.
- Groups will summarize their findings and prepare to share with the class.

Step 3: Demonstration Activities

- Each group chooses one piece of apparatus to demonstrate its use (either through a simple demonstration, if possible, or by acting it out).
- Encourage creativity in showcasing how the apparatus works in a lab scenario.

Step 4: Drawing and Displaying Charts

- Each group will create a chart that includes a drawing of their chosen apparatus and a brief description of its uses.
- Afterward, they will display their charts in the classroom for everyone to see.

Conclusion (5 minutes):

- Summarize key points discussed during the lesson: identification, uses, and demonstrations of laboratory apparatus.
- Conduct a brief interactive quiz where learners can answer questions based on the charts displayed.
- Preview the next topic, such as the importance of measurement in experiments, and ask students to think about how the apparatus might aid in that process.

Extended Activities:

- Research Project: Have students choose one laboratory apparatus and create a mini-poster that provides information about its history, uses, and any interesting facts.
- Home Experiment Journal: Ask students to keep a journal of any scientific experiments they conduct at home, noting which laboratory apparatus they use and how it helps in their experiments.

Teacher Self-Evaluation:

WEEK 9: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. State the different ways of handling and caring for apparatus and instruments in the laboratory.
2. Discuss the importance of taking care of laboratory apparatus and instruments.
3. Prepare charts or posters illustrating ways to care for laboratory apparatus and instruments.
4. Acknowledge the need for proper care of laboratory apparatus and instruments.

Key Inquiry Questions:

- How should you care for the laboratory apparatus and instruments?
- Why are most laboratory apparatus made of glass?

Learning Resources:

- Active Integrated Science textbook (pg 57-59)
- Posters illustrating laboratory apparatus
- Various laboratory apparatus

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on safety in the laboratory.

- Lead a discussion on the importance of laboratory equipment and introduce the day's topic by having students read relevant content from their textbooks. Emphasize key concepts regarding care and handling of laboratory apparatus.

Lesson Development (30 minutes):

Step 1: Brainstorming

- In small groups, students will discuss and brainstorm different types of laboratory apparatus they use. Each group will list practical ways to handle and take care of them.

Step 2: Group Discussion

- Groups will share their brainstormed ideas with the class. The teacher will facilitate a discussion that highlights common practices and any misconceptions regarding the care for different instruments.

Step 3: Chart Preparation

- Students will create charts or posters that illustrate the best practices for handling and caring for laboratory apparatus. Emphasize creativity and clarity in their presentations.

Step 4: Practice Care Techniques

- If time allows, students will practice careful handling techniques with available laboratory apparatus, focusing on gentle handling and proper storage.

Conclusion (5 minutes):

- Summarize the key points covered in the lesson, emphasizing the importance of caring for lab equipment.
- Conduct a brief interactive quiz or game to reinforce what was learned about the proper care of laboratory instruments.
- Prepare students for the next class by introducing the topic of different types of materials used in laboratory apparatus and their specific uses.

Extended Activities:

- Research Project: Have students research a specific type of laboratory apparatus and create a presentation that includes its uses, materials, and care practices.
- Field Trip: Arrange a visit to a local science lab or university laboratory where students can see professional apparatus in use and understand their care.
- Lab Manual Creation: In groups, students can compile a simple lab manual that includes proper handling and care instructions for various lab equipment.

Teacher Self-Evaluation:

WEEK 9: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, students will be able to:

1. Define the term consumer protection.
2. Explain the importance of consumer protection when handling laboratory apparatus and chemicals.
3. Use digital devices to research safety precautions for handling lab equipment.
4. Appreciate the importance of consumer protection in laboratory scenarios.

Key Inquiry Question:

- What is the importance of consumer protection when handling apparatus and chemicals in the laboratory?

Learning Resources:

- Digital devices
- Active Integrated Science textbook, pages 59-61

Organisation of Learning:

Introduction (5 minutes):

- Briefly review the previous lesson's content.
- Introduce the term "consumer protection" and ask students for any prior knowledge.

- Guide learners to read pages 59-61 of the Active Integrated Science textbook, focusing on consumer protection in the lab.

Lesson Development (30 minutes):

Step 1: Define Consumer Protection

- In pairs, students will discuss and brainstorm ideas to define the term "consumer protection."
- Each pair shares their definition with the class.
- Teacher consolidates their answers and provides a clear definition.

Step 2: Discuss Importance

- Groups will discuss why consumer protection is crucial when using laboratory apparatus and chemicals.
- Students will create a list of potential dangers if consumer protection is not observed.
- Groups will share their ideas and solutions with the class.

Step 3: Research Safety Precautions

- Students are guided to use digital devices to look up safety precautions for handling various apparatus and chemicals.
- Each group will summarize their findings and prepare to share key safety tips with the class later.

Step 4: Create Safety Posters

- Each group will design a poster that highlights the safety precautions discussed.
- Encourage creativity and clarity in presenting their information.
- Display posters around the classroom to create a safety awareness environment.

Conclusion (5 minutes):

- Summarize the key concepts covered: consumer protection and its importance in the lab.
- Conduct a quick interactive quiz or a game (e.g., Kahoot!) to reinforce main topics discussed.
- Briefly preview upcoming topics to prepare students for the next lesson.

Extended Activities:

- Research Assignment: Ask students to research a specific chemical used in labs and write a short report on its safety precautions, including consumer protection measures.
- Guest Speaker: Invite a local scientist or safety officer to speak about lab safety and consumer protection in the scientific community.
- Class Debate: Organize a debate on the importance of consumer protection in various scenarios outside of the lab setting.

Teacher Self-Evaluation:

WEEK 10: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Scientific Investigation

Sub-Strand: Laboratory Apparatus and Instruments

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to"

1. Attempt the questions on the sub-strand: laboratory apparatus and instruments.

Key Inquiry Question(s):

- What are the different types of laboratory apparatus used in scientific investigations?
- How does each instrument contribute to the accuracy and effectiveness of experiments?

Learning Resources:

- Assessment books
- Digital devices
- Active Integrated Science, pages 61-62

Organisation of Learning:

Introduction (5 minutes):

- Begin the lesson with a brief review of the previous lesson on scientific methods. Ask students to share what they remember about the scientific process.
- Guide learners to read through pages 61-62 of the Active Integrated Science textbook, focusing on laboratory apparatus. Encourage a discussion about their experiences using these tools in previous experiments.

Lesson Development (30 minutes):

Step 1: Identifying Apparatus

- Ask learners to independently list different laboratory apparatus mentioned in the textbook. Have them pair up and compare their lists to ensure they have understood the content.

Step 2: Function and Use

- Instruct students to choose three pieces of laboratory apparatus from their lists. They should write down what each tool is used for and why it is important in scientific investigations.

Step 3: Safety Considerations

- Discuss the importance of safety when using laboratory instruments. Ask students to think of at least two safety procedures that they should follow when using their chosen apparatus.

Step 4: Question Attempt

- Provide learners with questions related to the sub-strand on laboratory apparatus. Allow them 15-20 minutes to work individually, answering the questions based on their reading and prior knowledge.

Conclusion (5 minutes):

- Summarize key points about the types of lab apparatus and their uses. Reinforce the learning objectives by asking students what they learned about the importance of these instruments.
- Conduct a brief interactive activity, such as a quiz or a quick "match the apparatus to its use" game, to reinforce main topics.
- Preview the next session by informing learners that they will explore experimental design and measurement techniques.

Extended Activities:

- Research Project: Assign students to research a specific laboratory instrument they are not familiar with and present their findings to the class.

- Classroom Experiment: Plan a simple experiment that requires using various apparatus, allowing students to gain hands-on experience in using them safely and efficiently.
- Create a Safety Poster: Have students create a poster that highlights important safety rules when using laboratory instruments. Display these posters around the classroom.

Teacher Self-Evaluation:

WEEK 10: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Mixtures, Elements, and Compounds

Sub Strand: Mixtures (a) Classification of mixtures

Specific Learning Outcomes:

- By the end of the lesson, students should be able to:

1. Define the term mixture and provide examples.
2. Differentiate between homogeneous and heterogeneous mixtures.
3. Classify different types of mixtures as homogeneous or heterogeneous.
4. Enjoy categorizing various mixtures as either homogeneous or heterogeneous.

Key Inquiry Questions:

- What is a mixture?
- What is the difference between a homogeneous and heterogeneous mixture?

Learning Resources:

- Dictionary
- Digital devices
- Active Integrated Science pg 64-65
- Various substances: salt, sugar, water, maize, beans, milk, iron filings, rice, flour

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on the types of matter (solids, liquids, gases).

- Ask students to share any new knowledge they may have related to mixtures since the last class.
- Present the key concepts they'll learn today and explain the objectives of the lesson.

Lesson Development (30 minutes):

Step 1: Define Mixtures

- In pairs, students will look up the definitions of 'mixture', 'homogeneous', and 'heterogeneous' in their dictionaries or digital devices.
- Ask students to write down their definitions and examples of each term to share with the class.

Step 2: Discuss Homogeneous and Heterogeneous Mixtures

- As a class, discuss what students found. Highlight differences between homogeneous (uniform composition) and heterogeneous (varied composition) mixtures.
- Provide examples: Homogeneous - vinegar, air; Heterogeneous - salad, beach sand.

Step 3: Practical Activity

- Organize students into small groups and provide them with different substances (salt, sugar, water, beans, etc.).
- Instruct them to create mixtures using the substances provided and observe the outcome (e.g., mix salt with water, beans with rice).

Step 4: Classification Activity

- After creating their mixtures, students will categorize their mixtures as homogeneous or heterogeneous based on their observations.
- Each group will share one mixture they've categorized, explaining why they classified it that way.

Conclusion (5 minutes):

- Summarize the key points: definitions of mixtures, characteristics of homogeneous and heterogeneous mixtures, and the classification of examples.
- Conduct a quick interactive activity, such as "Mixture Quiz," where students can answer questions about mixtures and their classifications.
- Preview next lesson topics, including elements and compounds, and pose a question for students to think about: "What do you think happens to mixtures when they are separated?"

Extended Activities:

- Research Assignment: Have students explore a common household mixture (like salad dressing or paint) and prepare a short presentation on its characteristics and classification.
- Mixture Journal: Encourage students to keep a journal where they note down examples of mixtures they encounter in daily life, categorizing each as homogeneous or heterogeneous.

Teacher Self-Evaluation:

WEEK 10: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Mixtures, Elements and Compounds

Sub Strand: Mixtures

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. Carry out simple activities to mix different substances to form mixtures.
2. Classify the mixtures formed based on the states of matter of the components of the mixture.
3. Enjoy classifying mixtures based on the states of matter of the components in the mixtures.

Key Inquiry Question:

- How can you classify mixtures based on the states of matter?

Learning Resources:

- Digital devices (for research and documentation)
- Substances: Salt, sugar, water, flour, kerosene, sand, maize, beans, iron filings
- Active Integrated Science textbook, pg 65

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on states of matter (solid, liquid, gas).
- Guide learners to read relevant content from the Active Integrated Science textbook, encouraging discussion on mixtures and their properties.

Lesson Development (30 minutes):

Step 1: Identifying States of Matter

- Discuss the three main states of matter (solid, liquid, gas) and their characteristics.
- Ask students to share examples of each state and write them on the board.

Step 2: Mixing Substances

- Divide learners into small groups.
- Each group receives a set of substances (e.g., water, salt, sugar, sand).
- Instruct students to mix different substances (e.g., water + salt, sugar + sand) and observe the results.
- Remind them to take notes on what they see and discuss within their groups.

Step 3: Classifying Mixtures

- After mixing, have groups regroup to classify their mixtures based on the states of matter of the components (solid + liquid, solid + solid).
- Each group should prepare to share one example of a mixture they made.

Step 4: Presenting Findings

- Groups present their mixtures and classifications to the class.
- Encourage questions and facilitate a class discussion to highlight different types of mixtures.

Conclusion (5 minutes):

- Summarize key points: definitions of mixtures, states of matter, and classification methods.
- Conduct a brief interactive quiz where students categorize previously discussed mixtures.
- Preview the next lesson, focusing on separating mixtures and related techniques, and pose questions for them to consider (e.g., "How can we separate a mixture back into its components?").

Extended Activities:

- Create a home experiment where students mix different household substances (e.g., vinegar and baking soda) and document the outcome.
- Develop a visual poster that represents different types of mixtures and their states of matter, which can be displayed in the classroom.

Teacher Self-Evaluation:

WEEK 10: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Mixtures, Elements and Compounds

Sub-Strand: Mixtures

Specific Learning Outcomes:

- By the end of the lesson, learners should be able to:

1. State the meanings of solute, solvent, and solution as used in mixtures.
2. Provide examples of solutes, solvents, and solutions encountered in daily life.
3. Conduct simple activities to determine solutes, solvents, and solutions in mixtures.
4. Recognize the importance of solutes and solvents in the formation of solutions.

Key Inquiry Question:

- What is the difference between solutes and solvents?

Learning Resources:

- Active Integrated Science (pages 64-65)
- Different solutes (e.g., salt, sugar)
- Different solvents (e.g., water, propanone)
- Digital devices for research
- Lesson notes

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson's key points.

- Lead a discussion about mixtures, directing learners to read selected passages from the Active Integrated Science textbook (pages 64-65) to enhance understanding of solutes, solvents, and solutions.

Lesson Development (30 minutes):

Step 1: Group Brainstorming

- Divide the class into small groups.
- Ask each group to brainstorm and discuss the meanings of the terms solute, solvent, and solution.
- Groups will prepare to share their ideas with the class.

Step 2: Research Activity

- In their groups, learners will use dictionaries or digital devices to look up the definitions of solute, solvent, and solution.
- Each group will compile their definitions and prepare a list of everyday examples of each term.

Step 3: Example Sharing

- Each group presents their findings to the class, sharing definitions and examples.
- Encourage other students to add their examples or thoughts on the presentations.

Step 4: Hands-on Activity

- Conduct a simple experiment:
- Provide samples of different mixtures (e.g., water with salt or sugar).
- Students will identify the solute and solvent in each mixture.
- Discuss the results as a class, reinforcing the concepts of solutes and solvents.

Conclusion (5 minutes):

- Summarize the main points covered during the lesson, emphasizing the distinctions between solutes, solvents, and solutions.
- Engage in a brief interactive quiz or game to reinforce key topics.
- Preview the upcoming topic of elements and compounds, prompting students to think of examples they may already know.

Extended Activities:

- Create a Mixture Display: Have learners create a poster presentation showing different mixtures, highlighting the solutes and solvents involved. They can include photos and examples from their own lives.
- Conduct Home Experiments: Encourage students to identify and report on different solutions at home, such as beverages (saltwater, sweet tea, etc.) and classify the solutes and solvents present.
- Digital Research Project: Ask students to select a solute or solvent to research and present how it is used in various industries or day-to-day applications.

Teacher Self-Evaluation:

WEEK 10: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	INTERGRATED SCIENCE			

Strand: Mixtures, Elements, and Compounds

Sub Strand: Mixtures

Specific Learning Outcomes:

- By the end of the lesson, the learner should be able to:

1. Identify different methods of separating mixtures in our daily life.
2. Discuss the different methods of separating mixtures in the laboratory.
3. Search the internet for information on the different methods of separating mixtures.
4. Appreciate the different methods of separating mixtures in our day-to-day life.

Key Inquiry Question(s):

- Which methods of separating mixtures do you know?

Learning Resources:

- Active Integrated Science pg 69
- Lesson notes
- Digital devices

Organisation of Learning:

Introduction (5 minutes):

- Review: Begin by briefly reviewing the previous lesson on mixtures, highlighting key concepts.
- Discussion: Engage learners by asking questions about mixtures they encounter at home or school. Encourage discussion around the importance of separating mixtures.

Lesson Development (30 minutes):

Step 1: Brainstorming

- Activity: In small groups, students brainstorm different methods they know of for separating mixtures in routines (e.g., using a strainer for pasta, filtering coffee).
- Share: Each group shares their ideas with the class, encouraging cross-group interaction.

Step 2: Research

- Guided Search: In their groups, students use digital devices or print resources to look up methods of separating both homogeneous (uniform composition) and heterogeneous (non-uniform composition) mixtures.
- Documentation: Groups take notes on what they find, focusing on the process and application of each method.

Step 3: Laboratory Discussion

- Discussion Points: Groups report back on their findings regarding laboratory methods, such as distillation, evaporation, and filtration.
- Comparison: Discuss how these methods differ from everyday separation methods and their significance in scientific work.

Step 4: Group Presentation

- Presentation: Each group presents their findings to the class. They should explain the methods discovered and provide a real-life example for each.
- Q&A: Encourage the class to ask questions and engage in a dialogue after each presentation.

Conclusion (5 minutes):

- Summary: Recap key points covered in the lesson, focusing on the different methods of separating mixtures found in daily life and laboratories.

- Interactive Activity: Conduct a quick interactive quiz using hand signals or whiteboards to reinforce concepts. For example, present a mixture and ask students to show which method would work best for separation.
- Preview: Briefly introduce the next topic related to mixtures and compounds, encouraging learners to think about mixtures they encounter throughout their week.

Extended Activities:

- Home Experiment: Have students conduct a simple mixture separation at home (e.g., sand and salt) and document the process, including challenges and successes.
- Research Project: Assign students to pick one method of separation and create a poster or slide presentation detailing how it works, its applications, and examples from everyday life.
- Field Trip: Plan a visit to a local recycling facility or water treatment plant to see real-life applications of separation methods in larger systems.

Teacher Self-Evaluation: