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|  | **GRADE 8** |  **PRE- TECHNICAL STUDIES** |  |  |  |

**2025 WEEK 1: LESSON 1**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Fire Safety

**Specific Learning Outcomes:**

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

1. Identify the possible causes of fire in a work environment.

2.Discuss the possible causes of fire in a work environment.

3.Search the internet for videos on possible causes of fire in the work environment.

4.Recognize the possible causes of fire in a work environment.

**Key Inquiry Question(s):**

- What are some of the causes of fire in a work environment?

**Learning Resources:**

- Pictures

- Digital devices (tablets/laptops)

- Internet

- Posters

- Top Scholar Pre-Technical Studies (pg 15-16)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin the class by briefly reviewing the previous lesson.

- Ask students to share one thing they remember about fire safety or fire causes.

- Introduce the topic of the day: causes of fire in a work environment, guiding students to read and discuss relevant content from the learning resources. Emphasize understanding the key concepts.

**Lesson Development (30 minutes):**

**Step 1:** Group Brainstorm

- Divide the class into small groups of 3-4 students.

- Ask each group to brainstorm and list possible causes of fire in a work environment, using their prior knowledge and the learning resources. Provide a few examples to get them started (e.g., faulty wiring, flammable materials, etc.).

**Step 2:** Video Search

- Instruct students to use digital devices to search the internet for educational videos that illustrate the possible causes of fire in a work environment.

- Allow them to watch 1-2 videos and take notes on key points.

**Step 3:** Discussion and Identification

- After watching the videos, regroup as a whole class.

- Ask each group to share at least one cause of fire they identified from the videos. Facilitate a discussion that highlights different perspectives and insights.

**Step 4:** Poster Preparation

- Have each group create a poster that visually represents the possible causes of fire in a work environment. They should include illustrations, keywords, and phrases based on their research and discussions.

**Conclusion (5 minutes):**

- Summarize the key points covered regarding fire causes in the work environment and the objectives achieved during the lesson.

- Conduct a brief interactive activity, such as a "quick quiz" where students can shout out answers to review what they learned.

- Preview upcoming topics related to fire safety and ask students to think about how they can apply fire safety knowledge in their own lives.

**Extended Activities:**

- Research Project: Students can research different types of fire safety equipment, such as fire extinguishers and alarms, and prepare a short presentation on their findings.

- Field Trip: Plan a visit to a local fire station to learn directly from fire safety professionals and see equipment in action.

- Safety Plan Creation: Require students to create a fire safety plan for their home or school that identifies risks and outlines prevention strategies.

**Teacher Self-Evaluation:**

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**WEEK 1: LESSON 2**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Fire Safety

**Specific Learning Outcomes:**

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

1. State ways of preventing fire outbreaks in the environment.

2. Discuss the ways of preventing fire outbreaks in the environment.

3. Prepare posters showing the ways of preventing fire outbreaks at the work environment.

4. Appreciate the ways of preventing fire outbreaks in the environment.

**Key Inquiry Question(s):**

- How can we prevent fire outbreaks in the work environment?

**Learning Resources:**

- Internet

- Posters

- Digital devices

- Top Scholar Pre-Technical Studies (pg 18-19)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review Previous Lesson: Begin with a quick recap of the prior lesson related to environmental safety.

- Discussion: Guide learners to read and discuss relevant content from the learning resources, ensuring they understand core concepts related to fire safety.

**Lesson Development (30 minutes):**

**Step 1:** Brainstorming

- Activity: In groups, learners brainstorm various ways to prevent fire outbreaks. Encourage them to think broadly and consider home, work, and public environments.

**Step 2:** Research

- Activity: Learners use textbooks and internet resources to gather more information about fire prevention methods. They should take notes and prepare to share their findings with the class.

**Step 3:** Group Discussion

- Activity: Groups come together to discuss their findings. Each group should summarize what they learned and prepare to present it to the class.

**Step 4:** Poster Preparation

- Activity: Using the insights gained, each group prepares a poster that visually represents the ways to prevent fire outbreaks in the work environment. Encourage creativity and clarity in their designs.

**Conclusion (5 minutes):**

- Summarize Key Points: Review the main ideas discussed during the lesson, emphasizing the importance of fire safety practices.

- Interactive Activity: Conduct a quick quiz or game where students match fire prevention methods to their benefits, reinforcing what was learned.

- Preview Upcoming Topics: Briefly introduce what will be covered in the next session, generating interest and anticipation among students.

**Extended Activities:**

- Research Project: Assign students to choose a public place (like a school or park) and create a detailed fire safety plan outlining preventive measures specific to that environment.

- Field Trip: Organize a visit to a local fire station where learners can engage with fire safety professionals and learn more about fire prevention techniques in the community.

- Create a Fire Safety Video: Encourage students to work in groups to create a short video demonstrating fire prevention tips and practices that can be shared with the community.

**Teacher Self-Evaluation:**

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**WEEK 1: LESSON 3**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Fire Safety

**Specific Learning Outcomes:**

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

1. Identify various fire fighting methods/techniques to stop fire in a work environment.

2. Describe the fire fighting methods applicable in a work environment.

3. Search the internet for video clips on fire fighting methods applicable in a work environment.

4. Acknowledge the importance of different fire fighting methods in a work environment.

**Key Inquiry Questions:**

- Which fire fighting methods do you use to put out a fire outbreak at home or school?

**Learning Resources:**

- Digital devices

- Top Scholar Pre-Technical Studies (pages 21-23)

- Video clips

- Pictures

**Organization of Learning:**

**Introduction (5 minutes):**

- Review the main concepts from the previous lesson related to safety measures and equipment in the workplace.

- Ask learners to share any experiences they have had regarding fire safety or firefighting techniques.

- Guide learners to read and discuss relevant content from the textbook and emphasize understanding of key terms related to fire safety.

**Lesson Development (30 minutes):**

**Step 1:** Brainstorming Activity

- Divide students into small groups and ask them to brainstorm different methods used to fight fires in workplaces. Encourage them to list down as many techniques as they can, such as using fire extinguishers, fire blankets, or water hoses.

- Once they have listed their ideas, each group will share a few methods with the class.

**Step 2:** Video Exploration

- Using digital devices, have each group watch selected video clips that demonstrate various firefighting methods.

- Groups should take notes on the techniques shown in the videos, paying attention to the context in which each method is applied.

**Step 3:** Discussion

- Bring the class back together and facilitate a discussion. Ask groups to present their findings and descriptions of the firefighting methods they observed in the videos.

- Highlight any new techniques presented that were not covered in the previous brainstorming session.

**Step 4:** Reflection

- Ask students to reflect individually on which firefighting method they believe would be most effective in their own home or school setting.

- Encourage a few volunteers to share their thoughts with the class.

**Conclusion (5 minutes):**

- Summarize the key points discussed in the lesson, emphasizing the importance of being familiar with different firefighting methods.

- Conduct a brief interactive activity where learners can match firefighting methods with their descriptions or applications.

- Preview the next lesson topic, which may involve emergency procedures in case of fire outbreaks.

**Extended Activities:**

- Create a Fire Safety Plan: Have students design a basic fire safety plan for their classroom or home, outlining evacuation routes and firefighting methods available.

- Research Project: Assign students to research a specific firefighting technique in more detail and present their findings to the class in the next lesson.

- Fire Drill Simulation: Organize a fire drill simulation and discuss the effectiveness of each firefighting method practiced.

**Teacher Self-Evaluation:**

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**WEEK 1: LESSON 4**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Fire Safety

**Specific Learning Outcomes:**

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

1. Demonstrate fire fighting methods to put out a fire.

2. Enjoy role playing the fire fighting methods to deal with a fire outbreak in a work environment.

**Key Inquiry Question(s):**

- How can you put out a fire outbreak in a work environment?

**Learning Resources:**

- Digital devices (tablets)

- Top Scholar Pre-Technical Studies (pg 22-23)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review Previous Lesson:

- Begin by revisiting the main points discussed in the last class related to fire safety.

- Discussion of Key Concepts:

- Guide learners to read sections from the Top Scholar Pre-Technical Studies to highlight fire safety methods.

- Encourage group discussions to foster understanding and share ideas.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Fire Fighting Methods

- Discuss different fire fighting methods such as using a fire extinguisher, smothering the fire with a blanket, or using water for certain types of fires.

- Ask students to share any experiences they may have relating to fire safety.

**Step 2:** Group Formation and Planning

- Organize learners into small groups.

- Assign each group a specific fire fighting method to role play.

- Instruct them to research their assigned method briefly using their tablets.

**Step 3:** Role Playing

- Allow groups to create a short skit demonstrating their assigned fire fighting method.

- Ensure they include necessary safety protocols in their skits, showcasing how to react in a fire outbreak in a work environment.

- Groups will perform their skits for the class as peers watch and take notes.

**Step 4:** Recording and Feedback

- Use digital devices to record each group's performance.

- After each role play, open the floor for quick feedback and suggestions from classmates.

- Encourage positive reinforcement and constructive critique.

**Conclusion (5 minutes):**

- Summarize Key Points:

- Reinforce the main fire fighting methods discussed and the importance of fire safety.

- Interactive Activity:

- Conduct a quick quiz or a brainstorm session where students summarize what they learned or ask questions.

- Preview Next Session:

- Provide a brief overview of the upcoming topics related to safe working environments.

**Extended Activities:**

1. Create a Fire Safety Plan:

- Students can create a fire safety plan for their homes or a hypothetical workplace, identifying exits, emergency contacts, and safety equipment.

2. Fire Safety Poster:

- Encourage students to design a fire safety awareness poster that illustrates the methods learned, which can be displayed around the school.

3. Guest Speaker:

- Organize for a local firefighter or safety officer to come and speak about fire safety, providing real-life examples and experiences.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 1**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Fire Safety

**Specific Learning Outcomes:**

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

1. Outline the need for observing fire safety in the work environment.

2. Discuss the importance of observing fire safety in the work environment.

3. Acknowledge the need for fire safety in the work environment.

**Key Inquiry Question:**

- Why is fire safety important in the work environment?

**Learning Resources:**

- Top Scholar Pre-Technical Studies, pg. 24

**Organization of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing key points from the previous lesson.

- Ask students to share anything they remember about fire safety or any related incidents.

- Guide students to read the relevant content from their learning resource, focusing on definitions and key concepts related to fire safety.

**Lesson Development (30 minutes):**

**Step 1:** Brainstorming Session

- Divide the class into small groups or pairs.

- Instruct each group to brainstorm and write down as many reasons as they can think of for why observing fire safety is important in the workplace.

- Encourage them to consider both physical safety and legal implications.

**Step 2:** Group Discussion

- Have each group share their list of reasons with the class.

- As each group presents, facilitate a discussion about their points, asking questions to deepen understanding (e.g., "Can you give an example of how fire safety measures can prevent injury?").

- Write key points on the board as students share their ideas.

**Step 3:** Real-Life Application

- Present a real-life scenario involving a workplace fire incident.

- Discuss as a class what could have been done differently to prevent the incident and how fire safety protocols might have changed the outcome.

**Step 4:** Importance of Procedures

- Explain the importance of having fire safety plans and procedures in place.

- Highlight the roles of different individuals in maintaining these safety practices.

- Encourage students to think about how they can apply this knowledge in their own lives or future careers.

**Conclusion (5 minutes):**

- Summarize the key points discussed: the reasons for fire safety and its importance.

- Conduct a quick interactive activity, such as a quiz or true/false statements, to reinforce the lesson’s main topics.

- Preview the next session's topics or pose questions like "What are the main components of a fire safety plan?" to engage students for upcoming discussions.

**Extended Activities:**

- Fire Safety Poster: Have students design a poster on fire safety tips they can hang in the classroom or school.

- Research Assignment: Assign students to research a specific fire safety law or regulation within their country or region and present it to the class.

- Fire Drill Simulation: Organize a fire drill simulation in school to practice safety protocols, discussing the lessons learned afterward.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 2**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Data Safety

**Specific Learning Outcomes:**

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

1. Differentiate between data and information in an electronic device.

2. Outline the importance of data in an electronic device.

3. Search the internet for information on the importance of data in electronics.

4. Acknowledge the importance of data in our electronic devices.

**Key Inquiry Questions:**

1. What is the difference between data and information?

2. What is the importance of data in our electronic devices?

**Learning Resources:**

- Digital devices (tablets, laptops, etc.)

- Internet access

- Loghorn Computer Grade textbook

- Teacher's notes

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review key concepts from the previous lesson (for example, types of electronic devices).

- Introduce the focus on data and information, guiding learners to read relevant content from the textbook.

**Lesson Development (30 minutes):**

**Step 1:** Brainstorming Session

- Organize learners into small groups.

- Prompt them to discuss and list their understanding of "data" and "information" in the context of electronic devices.

- Have each group share 1-2 points with the class.

**Step 2:** Research Activity

- Guide learners to search the internet for information regarding the importance of data in electronic devices.

- Provide specific websites or search terms to assist them in finding relevant information.

- Ask them to take notes on key points they find during their research.

**Step 3:** Group Discussion

- Reconvene as a class and open the floor for groups to share insights on what they found related to the importance of data.

- Facilitate discussion to highlight different perspectives and key ideas.

**Step 4:** Define and Differentiate

- Conclude the lesson development by defining key terms: "data" vs. "information".

- Use real-life examples to clarify the distinction (e.g., raw sensor readings vs. a digital display showing the temperature).

**Conclusion (5 minutes):**

- Summarize the key points from the lesson, reinforcing the differences between data and information and their relevance.

- Conduct a quick interactive activity, such as a Q&A Game where learners can answer questions to reinforce understanding.

- Preview the next lesson which will delve into data safety and storage, encouraging learners to think about how data can be protected.

**Extended Activities:**

- Data Journal: Ask students to maintain a data journal for one week where they document different types of data they interact with daily (e.g., photos, texts, and app data) and what information these data points convey.

- Presentation Project: Assign groups to create a short presentation on the importance of data in specific electronic devices, such as smartphones, computers, or smart home devices, emphasizing real-world applications.

- Research Paper: Challenge students to write a one-page report on how data safety measures can protect the information stored in electronic devices.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 3**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Data Safety

**Specific Learning Outcomes:**

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

1. Identify threats to data in electronic devices.

2. Search the internet for information on these threats.

3.Prepare posters illustrating the threats to data in electronic devices.

4.Acknowledge the importance of understanding these threats.

**Key Inquiry Question(s):**

- What are the threats to data in electronic devices?

**Learning Resources:**

- Digital devices (tablets, computers, smartphones)

- Digital content on data safety and threats

- Markers and poster paper

- Loghorn Computer Grade 7 text

- Lesson notes from the teacher

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a quick review of the previous lesson on electronic devices and their functions.

- Engage learners in a brief discussion about the importance of data safety, prompting them to think about their own experiences with electronic devices.

**Lesson Development (30 minutes):**

**Step 1:** Reading & Identification

- Split the class into small groups.

- Each group reads a section of the Loghorn Computer Grade 7 text and identifies various threats to data in electronic devices (e.g., viruses, hacking, phishing).

- Groups will discuss their findings amongst themselves to ensure everyone contributes.

**Step 2:** Research Activity

- In pairs, learners will use digital devices to search the internet for additional threats to data in electronic devices.

- Encourage them to look for recent statistics or articles to back their findings.

**Step 3:** Discussion

- Reconvene as a class and facilitate a conversation where each pair shares what they discovered.

- Compile a list on the board of all identified threats.

**Step 4:** Poster Preparation

- Each group is tasked with designing a poster that creatively displays at least three threats to data in electronic devices.

- Posters should include illustrations and brief explanations of each threat. Allocate time for this activity, ensuring students have access to necessary materials.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson, reinforcing the dangers of various threats to data.

- Conduct a quick interactive quiz (e.g., Kahoot!) to review what students learned about the threats to data.

- Preview the next session where they will learn about ways to protect data from these threats.

**Extended Activities:**

- Online Research Project: Assign students to choose a specific threat (e.g., phishing) and create a brief presentation or video that explains what it is, how it works, and how to avoid it.

- Create a Digital Safety Guide: As homework, have students compile a list of best practices for data safety in a digital format to be shared with the class.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 4**

**Strand:** Foundations of Pre-Technical Studies

**Sub Strand:** Data Safety

**Specific Learning Outcomes:**

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

1. Identify the ways of protecting data in electronic devices.

2. Describe the ways of protecting data in electronic devices.

3. Prepare flashcards showing the ways of protecting data in electronic devices.

4. Appreciate the importance of data protection in electronic devices.

**Key Inquiry Question:**

- How can we protect data in electronic devices?

**Learning Resources:**

- Manilla papers

- Marker pens

- Loghorn Computer (Grade 7)

- Lesson notes

- Digital devices

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a quick review of the previous lesson on electronic devices.

- Encourage students to share any experiences related to data loss or security breaches.

- Introduce today’s topic: data protection in electronic devices by discussing real-life implications.

**Lesson Development (30 minutes):**

**Step 1:** Identify Ways of Protecting Data

- In pairs, students will read a passage from the learner's book that discusses data protection strategies.

- Students will list different methods of protecting data, such as using strong passwords, regularly backing up data, and installing antivirus software.

**Step 2:** Describe the Ways of Protecting Data

- Each pair will choose one method from their list and prepare to share it with the class.

- Encourage them to describe why this method is effective, its advantages, and its application.

**Step 3:** Create Flashcards

- Students will create flashcards using manilla papers and marker pens, illustrating their chosen method of data protection.

- Each flashcard should include the method's name, a brief description, and an icon or drawing representing the method.

**Step 4:** Group Discussion

- Groups will present their flashcards to the class.

- Facilitate a discussion emphasizing the importance of each data protection method and how it can prevent data loss.

**Conclusion (5 minutes):**

- Summarize the key points discussed regarding data protection in electronic devices and the methods identified.

- Conduct a quick interactive quiz using a few questions based on what was learned in class to reinforce understanding.

- Preview the upcoming topic on cybersecurity and potentially discuss questions students should think about, such as "What types of threats can compromise data security?"

**Extended Activities:**

- Research Project: Assign students to research a recent data breach incident and present their findings, focusing on the aftermath and ways the incident could have been prevented.

- Safety Campaign: Encourage students to create a digital poster or video campaign promoting data safety tips for their peers.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 1**

**Strand:** Foundation of Pre-Technical Studies

**Sub Strand:** Data Safety

**Specific Learning Outcomes:**

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

1.Use electronic devices to secure data using effective methods of data protection.

2. Acknowledge the importance of data safety in daily life.

**Key Inquiry Question(s):**

- How can you protect data in electronic devices?

**Learning Resources:**

- Longhorn Computer Grade 7 Teacher's Notes

- Electronic devices (e.g., tablets, laptops)

- Relevant online resources/articles about data safety (optional)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on electronic devices and their features.

- Guide learners to read and discuss key concepts related to data safety from the learning resources. Encourage discussion on why data safety is essential in today’s technology-driven world.

**Lesson Development (30 minutes):**

**Step 1:** Understanding Data Safety

- Briefly explain what data safety means and why it is crucial.

- Discuss potential threats to data (e.g., viruses, hacking) and what it means to secure data.

- Encourage students to think about how they might have encountered these threats in their lives.

**Step 2:** Exploring Protection Methods

- Introduce various methods of data protection, such as:

- Password protection

- Encryption

- Software updates

- Using secure networks

- Illustrate each method with examples and discuss when each would be appropriate to use.

**Step 3:** Group Activity - Securing Data

- Divide students into small groups or pairs.

- Assign each group a specific electronic device (tablet, laptop, etc.) and task them with identifying three techniques they could use to secure data on that device.

- Provide time for students to discuss and plan their findings.

**Step 4:** Presentations and Peer Feedback

- Have each group present their findings to the class (1-2 minutes per group).

- Allow time for peer assessment and constructive feedback, encouraging students to ask questions or suggest additional security measures.

**Conclusion (5 minutes):**

- Summarize key points discussed in the lesson, highlighting the importance of data safety and effective security methods.

- Conduct a brief interactive quiz or game to reinforce main concepts discussed.

- Preview the next lesson, which will cover the consequences of data breaches and strategies to manage information safely.

**Extended Activities:**

1. Research Project: Encourage students to research a recent data breach incident and present their findings, including what security measures failed and what could have been done differently.

2. Creating a Data Safety Handbook: Students can create a simple handbook outlining their own data protection strategies and tips, which they can use at home.

3. Role-Playing Scenarios: Organize scenarios where students must determine the best course of action when facing potential data threats (e.g., receiving a suspicious email).

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 2**

**Strand:** Communication

**Sub Strand:** Plane Geometry

**Specific Learning Outcomes:**

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

1. Identify the instruments used in drawing.

2. Draw the instruments used in drawing.

3. Appreciate the instruments used in drawing.

**Key Inquiry Question(s):**

- Which instruments are used in drawing?

**Learning Resources:**

- Digital devices for research

- Video clips demonstrating drawing instruments

- Lesson notes

- Top Scholar Pre-Technical Studies Grade 7, pg. 100

**Organisation of Learning:**

**Introduction (5 minutes):**

- Start the lesson by reviewing key points from the previous lesson on geometry and its importance in various fields.

- Guide learners to read and discuss relevant content from Top Scholar Pre-Technical Studies, emphasizing definitions and uses of drawing instruments.

**Lesson Development (30 minutes):**

**Step 1:** Research Instruments

- In pairs, students will use digital devices to search for videos or images of common drawing instruments (e.g. compass, straightedge, protractor, T-square).

- As they find resources, they will note down the names and functions of these instruments.

**Step 2:** Identify and Discuss

- Students will regroup to share their findings.

- Each pair will present one instrument they discovered, discussing its purpose and importance in geometry.

**Step 3:** Drawing Instruments

- Now, using drawing paper or charts, each student will create drawings of at least three different drawing instruments.

- They will label each instrument with its name and a brief description of its use.

**Step 4:** Gallery Walk

- Organize a gallery walk where students can display their drawings around the classroom.

- Allow students to walk around, view each other’s work, and offer positive feedback or ask questions about the instruments presented.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson, reinforcing the importance of each instrument in drawing and geometry.

- Conduct a brief interactive activity, such as a quick quiz or a group discussion where students can share how they may use these instruments in real-life applications.

- Prepare students for the next session by introducing upcoming topics (e.g., geometric shapes, measurements) and posing questions to ponder.

**Extended Activities:**

- Instrument Creation: Have students create a model of one drawing instrument using recycled materials, which they can present in the next class.

- Research Project: Assign a small project where students research the history and evolution of one specific drawing instrument and its impact on art and engineering.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 3**

**Strand:** Communication

**Sub-Strand:** Plane Geometry

**Specific Learning Outcomes:**

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

1. State the meaning of a drawing layout.

2. Describe the components of the drawing layout.

3. Use digital devices to search for information on the components of a drawing layout.

4. Appreciate the drawing layout in various drawing purposes.

**Key Inquiry Question(s):**

- What are the key components of drawing layouts?

**Learning Resources:**

- Digital devices (tablets, laptops)

- Teacher's Notes

- Pictures of different drawing layouts

- Drawing papers

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a brief review of the previous lesson, connecting it to today's topic about drawing layouts.

- Guide learners to read and discuss content from provided resources, emphasizing understanding. Ask each group to share one key point they discussed.

**Lesson Development (30 minutes):**

**Step 1:** Understand the Meaning of a Drawing Layout

- In groups, learners will brainstorm the definition of a drawing layout.

- Each group will share their definition with the class, and the teacher will summarize the key points on the board.

**Step 2:** Identify Key Components of a Drawing Layout

- Learners will work in pairs to identify and list the key components of a drawing layout (e.g., drawing surface, margins, title page).

- Using digital devices, pairs will search for more information on these components and prepare to present their findings.

**Step 3:** Discuss the Components in Detail

- Each pair will take turns discussing what they found about each component.

- The teacher will highlight the purpose of each component and how it contributes to improving clarity and organization in drawings.

**Step 4:** Appreciation of Drawing Layouts

- Conclude the development phase by discussing how a well-structured drawing layout aids in communication and understanding in various fields (e.g., engineering, architecture).

- Encourage learners to express their thoughts on why this is important.

**Conclusion (5 minutes):**

- Summarize the key points learned about drawing layouts and their components.

- Conduct a brief interactive quiz or game where learners identify components from example layouts.

- Preview the next session topic: "The Importance of Scale in Drawing Layouts." Pose questions like "What would happen if scale isn't used properly?"

**Extended Activities:**

1. Research Project: Assign learners to research different types of drawing layouts used in various industries (e.g., architecture, graphic design) and prepare a presentation for the class.

2. Drawing Creation: Have learners create their own drawing layout on paper, including all identified components. They should apply what they learned to demonstrate proper organization.

3. Digital Layout Exploration: Learners can use design software to create a digital drawing layout, allowing them to explore modern tools used in the field.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 4**

**Strand:** Communication

**Sub Strand:** Plane Geometry

**Specific Learning Outcomes:**

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

1. Outline the uses of each of the drawing instruments and equipment.

2. Discuss the uses of the drawing instruments.

3. Prepare charts showing the uses of the drawing instruments.

4. Acknowledge the uses of the different drawing equipment.

**Key Inquiry Question(s):**

- What are the uses of the different drawing instruments?

**Learning Resources:**

- Digital devices (tablets/laptops)

- Teacher's Notes

- Top Scholar Pre-Technical Studies Grade 7, pg 101

- Internet access

- Video clips demonstrating drawing instruments

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review the previous lesson, highlighting any drawing techniques or instruments previously discussed.

- Introduce the day's inquiry question and explain the importance of understanding drawing instruments in both geometry and physics.

- Guide learners to read and discuss relevant content from the learning resources, ensuring they comprehend the key concepts about drawing instruments.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Drawing Instruments

- Explain and display various drawing instruments (e.g., compass, protractor, ruler, set square).

- Have students individually brainstorm and write down any prior knowledge or experience they have using these tools.

**Step 2:** Research with Digital Devices

- In pairs, learners will use digital devices to research and watch short video clips on the uses of different drawing instruments.

- Encourage them to take notes on key points from the videos regarding how and why these instruments are used in geometry and other applications.

**Step 3:** Group Discussion

- Ask each pair to share one new thing they learned about a specific drawing instrument with the class.

- Facilitate a group discussion focusing on the different contexts in which these instruments are used, prompting deeper thinking about their practical applications.

**Step 4:** Chart Preparation

- Assign each group a specific drawing instrument and instruct them to prepare a chart showing its uses, benefits, and any interesting facts.

- Each group should use their notes from the research and the discussion as a basis for their charts.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson regarding drawing instruments and their various applications in plane geometry.

- Conduct a brief interactive activity, such as a quick quiz or a matching game, to reinforce the uses of each instrument.

- Introduce the topic for the next lesson, which could involve applying these tools in a geometric construction project or solving related problems.

**Extended Activities:**

1. Instrument Usage Report: Have students write a short report on one specific drawing instrument, its history, design, and applications in real-world scenarios.

2. Create a Drawing: Assign students to create a detailed geometric figure using at least three different drawing instruments discussed in class, documenting the process and reflecting on the importance of each tool used.

3. Online Collaboration: Encourage students to create an online presentation using platforms like Google Slides or Prezi, showcasing their chosen instrument and its uses, and share with the class.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 1**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Plane Geometry

**Specific Learning Outcomes:**

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

1. Outline the steps of creating a drawing layout.

2. Demonstrate how to draw a drawing layout.

3. Use digital devices to watch clips on the steps of creating a drawing layout.

4. Enjoy creating a drawing layout.

**Key Inquiry Question:**

- How do you create a drawing layout?

**Learning Resources:**

- Digital devices

- Video clips

- Drawing papers

- Pencils and Erasers

- Lesson notes

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on basic geometric shapes and their properties.

- Discuss the relevance of drawing layouts in various technical fields such as architecture and engineering.

- Engage learners by allowing them to share their thoughts on the importance of creating clear layouts.

**Lesson Development (30 minutes):**

**Step 1:** Explore Video Clips

- Divide the class into pairs and provide access to digital devices.

- Instruct learners to search for and watch clips that explain the steps of creating drawing layouts.

- Encourage students to take notes on key points they find useful.

**Step 2:** Outline the Steps

- Gather the class back together and ask several pairs to share what they learned from the videos.

- As a group, create a list of the steps involved in creating a drawing layout on the board to ensure everyone is clear on the process.

**Step 3:** Practice Drawing Layout

- Hand out drawing papers, pencils, and erasers to each student.

- Instruct learners to create their drawing layouts based on the steps outlined.

- Walk around the classroom to provide support and feedback as students work.

**Step 4:** Peer Assessment

- Ask students to share their layouts with their partners and give each other constructive feedback using guiding questions: What is clear? What could be improved?

- Encourage students to revise their drawings based on peer feedback.

**Conclusion (5 minutes):**

- Summarize the key points covered during the lesson, highlighting the steps for creating a drawing layout.

- Conduct a brief interactive quiz or game, such as a Kahoot, to reinforce the main topics and help assess their understanding.

- Prepare learners for the next session by introducing the idea of applying their layouts to real-world projects, prompting them to consider how they might use drawing layouts in future lessons.

**Extended Activities:**

- Home Project: Assign students to choose a simple object (e.g., a room or a piece of furniture) and create a drawing layout for it. This project can further develop their skills and show the real-world application of layout design.

- Group Work: In small groups, learners can design a layout for a community area, such as a park or school yard, considering elements like flow and accessibility. They can then present their designs to the class.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 2**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Plane Geometry

**Specific Learning Outcomes:**

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

1. Outline the steps to drawing combined shapes used in drawing.

2. Use digital devices to search for information on how to draw combined shapes.

3. Practice drawing different combined shapes.

4. Acknowledge the steps to follow while drawing combined shapes.

**Key Inquiry Questions:**

1. What are combined shapes?

2. How can you draw combined shapes?

**Learning Resources:**

- Digital devices

- Internet

- Lesson notes

- Drawing books

- Pencils

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by asking a few questions related to simple shapes and their properties.

- Guide learners to read and discuss relevant content from the learning resources. Emphasize the importance of understanding combined shapes in drawing and how they can be used in real-life applications.

**Lesson Development (30 minutes):**

**Step 1:** Understanding Combined Shapes

- Activity: In pairs, learners brainstorm on the meaning of combined shapes (for example, shapes formed by merging two or more different shapes).

- Discussion Points: What shapes can you think of that are combined? Why do we use combined shapes in drawing?

**Step 2:** Research on Drawing Combined Shapes

- Activity: Guided search using digital devices to find the steps involved in drawing combined shapes.

- Questions to Explore: What are the common techniques? Are there any specific tools required?

**Step 3:** Outlining the Steps

- Activity: In small groups, learners compile the steps they found into a clear outline for drawing combined shapes.

- Outcome: A collaborative list should include basic steps like measuring, sketching, and finalizing details.

**Step 4:** Practicing Drawing Combined Shapes

- Activity: Each student will practice drawing a given set of combined shapes (examples: a rectangle combined with a circle, a triangle combined with a square).

- Reflection: After drawing, students can compare their drawings in pairs and discuss the effectiveness of the steps they followed.

**Conclusion (5 minutes):**

- Summarize key points discussed during the lesson: the definition of combined shapes, the steps to draw them, and the collaborative process of learning.

- Conduct a brief interactive activity: ask students to quickly sketch a combined shape on their drawing books and share their creation with the class.

- Prepare learners for the next session by giving them a preview of the topic of transformations in plane geometry, encouraging them to think about how combined shapes can change.

**Extended Activities:**

1. Shape Investigation Project: Assign students to find and photograph combined shapes in their environment (like buildings, parks, etc.) and bring their findings for discussion in the next class.

2. Create a Combined Shape Art Piece: Encourage students to create an artwork using combined shapes and explain their design choices.

3. Digital Drawing Application Exploration: Ask students to explore and create combined shapes using a drawing app on their devices as homework.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 3 - 4**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Plane Geometry

**Specific Learning Outcomes:**

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

1. Construct combined shapes applied in drawing.

2. Enjoy drawing combined shapes.

**Key Inquiry Question(s):**

- How are combined shapes drawn?

**Learning Resources:**

- Drawing instruments (rulers, compasses, pencils, erasers).

- Drawing books or papers.

**Organisation of Learning:**

**Introduction (5 minutes):**

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

- Ask students to share any experiences they've had with drawing or combining shapes.

- Introduce the key inquiry question and set the stage for the day's lesson on drawing combined shapes.

**Lesson Development (30 minutes):**

**Step 1:** Understanding Combined Shapes

- Activity: Discuss the concept of combined shapes as shapes made from two or more simpler shapes. Show examples on the board or projector.

- Guiding Questions: What shapes can we combine? How do they fit together?

**Step 2:** Demonstration of Drawing Techniques

- Activity: As a class, demonstrate how to draw a combined shape, such as a rectangle combined with a circle.

- Emphasis: Focus on measuring accurately and aligning the shapes properly.

**Step 3:** Group Collaboration

- Activity: Divide the class into small groups. Each group will choose different shapes to combine and draw. Encourage creativity in their combinations.

- Instructions: Use the drawing instruments to create their designs on paper. Have them discuss within their groups how they are combining their shapes.

**Step 4:** Display and Feedback

- Activity: Each group will display their final drawings for the class to see.

- Feedback: Provide constructive feedback and encourage peers to comment on each other's work. Highlight good practices and creativity.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson, including the process and enjoyment of creating combined shapes.

- Conduct an interactive activity where students identify different combined shapes in the classroom or in drawings.

- Prepare learners for the next session by hinting at exploring more complex shapes or using 3D combined shapes.

**Extended Activities:**

- Assign students to create a mini-project where they design a poster that illustrates various combined shapes they encounter in their daily lives.

- Encourage them to find objects at home that represent different combined shapes and bring photographs or sketches for the next class.

- Suggest using digital drawing applications to create combined shapes and share them in a class gallery.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 1**

**Strand:** Communication

**Sub Strand:** Plane Scale Drawing

**Specific Learning Outcomes:**

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

1. Identify the applications of combined shapes in day-to-day life.

2. Discuss the applications of combined shapes in day-to-day life.

3. Use digital devices to search for information on applications of combined shapes in day-to-day life.

4. Embrace the use of plane geometry in drawing.

**Key Inquiry Question(s):**

- How are combined shapes applied in day-to-day life?

**Learning Resources:**

- Digital devices (tablets/computers)

- Internet access

- Lesson notes on combined shapes and their applications

**Organisation of Learning:**

**Introduction (5 minutes):**

1. Begin the lesson by reviewing key concepts from the previous lesson related to geometry and shapes.

2. Ask learners to read selected content from their lesson notes, focusing on the importance of combined shapes. Facilitate a brief discussion to reinforce understanding of the key concepts.

**Lesson Development (30 minutes):**

**Step 1:** Brainstorming

- In pairs, students brainstorm various examples of combined shapes in everyday objects, such as furniture, vehicles, and buildings.

- Encourage them to think creatively and consider how different shapes come together to form complex structures.

**Step 2:** Group Discussion

- Have students come together in small groups to discuss their findings. Each group can choose a few examples to share with the class.

- Facilitate a discussion that highlights the different applications of combined shapes, emphasizing how geometry plays a role in design and functionality.

**Step 3:** Digital Research

- Guide students to use digital devices to conduct quick research on additional applications of combined shapes. They should focus on finding real-world examples or interesting facts.

- Encourage them to take notes on what they discover for sharing in the next group session.

**Step 4:** Sharing Findings

- Have each group present their research findings to the class.

- Encourage questions from peers and facilitate a discussion about the relevance of combined shapes in those examples.

**Conclusion (5 minutes):**

1. Summarize the key points discussed in the lesson, including the different applications of combined shapes found by the students.

2. Conduct a brief interactive activity, such as a "shape scavenger hunt," where students identify combined shapes around the classroom or school.

3. Prepare learners for the next session by previewing upcoming topics, such as more complex plane figures or introducing dimensions in geometry.

**Extended Activities:**

1. Shape Art Project: Assign students to create an art piece using combined geometric shapes, showcasing creativity while applying their understanding of the topic.

2. Geometry in Architecture: Have students research a local building or structure and create a presentation on the combined shapes involved in its design.

3. Shape Design Challenge: Organize a design challenge where students use given measurements to create a working model using combined shapes, encouraging hands-on application of plane geometry.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 2**

**Strand:** Communication

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1. State the meaning of dimensioning as used in drawing.

2. Identify the types of dimensioning in drawing.

3. Draw linear and radial dimensioning in drawing.

4. Appreciate the different types of dimensioning.

**Key Inquiry Question:**

- What is dimensioning in drawing?

**Learning Resources:**

- Charts with examples of radial and linear dimensioning.

- Top Scholar Pre-Technical Studies, pages 139-140.

- Lesson notes provided by the teacher.

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review the main points from the previous lesson related to drawing and design.

- Introduce the key inquiry question: "What is dimensioning in drawing?"

- Guide learners to read and discuss relevant content from the provided learning resources, emphasizing the understanding of the key concepts.

**Lesson Development (30 minutes):**

**Step 1:** Definition of Dimensioning

- In pairs, students will search for the definition of dimensioning using digital or print resources.

- Each pair will discuss their findings and prepare to present a simplified definition to the class.

**Step 2:** Types of Dimensioning

- As a class, work together to identify different types of dimensioning (e.g., linear, radial).

- Encourage students to share what they found during their discussions and create a chart on the board to categorize this information.

**Step 3:** Drawing Dimensioning

- Introduce the concepts of linear and radial dimensioning with examples from the charts.

- Students will work in groups to practice drawing both types of dimensioning using a ruler and compass, referencing the lesson notes for guidance.

**Step 4:** Presentation and Discussion

- Each group will present their drawings of linear and radial dimensioning to the class.

- A short discussion will take place, encouraging students to share insights about the different types they explored and any challenges they faced while drawing.

**Conclusion (5 minutes):**

- Summarize key points discussed during the lesson, including the definition of dimensioning, types of dimensioning, and the significance of accurate dimensioning in drawings.

- Conduct a brief interactive activity, such as a quiz or a think-pair-share, to reinforce the main topics.

- Prepare learners for the next session by previewing upcoming topics and posing questions for them to consider, such as "How does dimensioning impact real-world engineering and design?"

**Extended Activities:**

1. Research Project: Students can research real-life applications of dimensioning in various fields like engineering, architecture, or manufacturing, and present their findings in a subsequent class.

2. Hands-On Activity: Give students crafting materials to create a simple 3D model and apply dimensioning techniques to annotate their creation with proper measurements.

3. Peer Teaching: Organize a session where students who excel in drawing dimensioning can teach basic concepts to their peers, reinforcing their own understanding through teaching.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 3**

**Strand:** Communication

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1. State the meaning of angular and arc line dimensioning in drawing.

2. Describe the angular and arc line dimensioning in drawing.

3. Draw the angular and arc line dimensioning in drawing.

4. Appreciate the use of angular and arc line dimensioning in drawing.

**Key Inquiry Question:**

- What is the difference between angular and arc line dimensioning as used in drawing?

**Learning Resources:**

- \*Top Scholar Pre-Technical Studies,\* pg 140-141

- Chart with angular and arc line dimensioning

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a quick review of the previous lesson on dimensioning. Ask students if they remember what dimensioning is and why it's important in drawing.

- Introduce the day's topic by asking students to open their textbooks to pages 140-141 and read about angular and arc line dimensioning. Facilitate a short discussion on their initial thoughts.

**Lesson Development (30 minutes):**

**Step 1:** Definition Exploration

- In small groups, have students brainstorm and write down what they think angular and arc line dimensioning mean.

- After 5 minutes, ask each group to share their definitions with the class, correcting misconceptions as necessary.

**Step 2:** Description Discussion

- Have students discuss the key properties of both angular and arc line dimensioning.

- Encourage students to reference the information from pages 140-141. Ask guiding questions such as, “How does angular dimensioning differ from arc dimensioning?”

- Facilitate a class discussion to summarize the key descriptions of both types.

**Step 3:** Drawing Practice

- Provide each student with graph paper and have them practice drawing an example of both angular and arc line dimensioning based on the definitions and descriptions discussed.

- Circulate the room to offer guidance and ensure students are applying the concepts correctly.

**Step 4:** Application and Appreciation

- Conclude the lesson development by discussing why angular and arc line dimensioning is important in technical drawings.

- Ask students to think about careers or projects where these skills might be useful, fostering appreciation for their learning.

**Conclusion (5 minutes):**

- Summarize the key points learned during the lesson, reiterating the definitions and importance of angular and arc line dimensioning.

- Conduct a quick interactive activity, such as a "Think-Pair-Share," where students share one thing they found interesting about the topic.

- Preview the upcoming lesson on more complex types of dimensioning or related drawing techniques, posing questions to consider: "How do these dimensions affect the readability of a drawing?"

**Extended Activities:**

- Create an Illustrated Guide: Have students create a brief illustrated guide that includes examples of angular and arc line dimensioning. They can use drawings and annotations to explain their significance in engineering drawings.

- Research Activity: Assign students to research different industries where these types of dimensioning are used (e.g., architecture, mechanical engineering) and present their findings to the class.

- Dimensioning Poster: Ask students to create a poster comparing angular and arc line dimensioning, highlighting differences, uses, and examples.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 4**

**Strand:** Communication

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1. Identify the lines used for dimensioning in drawing.

2. Discuss how to draw the lines used for dimensioning.

3. Practice how to draw the lines used for dimensioning.

4. Acknowledge the types of lines used for dimensioning in drawing.

**Key Inquiry Question:**

What types of lines are used in dimensioning?

**Learning Resources:**

- Top Scholar Pre-Technical Studies, pages 141-142

- Chart with the lines used for dimensioning

- Lesson Notes

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by briefly discussing what learners previously learned about drawing basics.

- Guide learners to read and discuss relevant content from pages 141-142 of Top Scholar Pre-Technical Studies, emphasizing dimensioning lines and their significance in technical drawings.

**Lesson Development (30 minutes):**

**Step 1:** Identifying Dimensioning Lines

- In pairs, students will study a chart that illustrates different types of dimensioning lines (such as extension lines, dimension lines, and leader lines).

- Ask students to identify and define each type of line, using their own words and notes.

**Step 2:** Describing Dimensioning Lines

- Each pair will come together with another pair to form small groups. Each group will share what they learned about each line type.

- Facilitate a class discussion to highlight key characteristics of each line type, ensuring that the definitions are clear.

**Step 3:** How to Draw Dimensioning Lines

- Demonstrate on the board how to draw the extension lines, dimension lines, and leader lines.

- Discuss the importance of line thickness, spacing, and placement in drawings.

**Step 4:** Practice Drawing Dimensioning Lines

- Provide students with graph paper and ask them to practice drawing the three types of dimensioning lines.

- Monitor the class while they work and provide individual feedback to ensure understanding and proper technique.

**Conclusion (5 minutes):**

- Summarize key points covered in the lesson, reiterating the importance of dimensioning in technical drawings.

- Conduct a brief interactive activity, such as a quick quiz or a "line identification" challenge using the charts provided.

- Provide a preview of the next session, mentioning that students will explore how to apply these lines in creating technical drawings.

**Extended Activities:**

1. Research Project: Students can choose a simple object and create a technical drawing using dimensioning lines, followed by a presentation to the class.

2. Classroom Gallery: Have students display their drawings around the classroom and conduct a gallery walk where they provide feedback on each other's work.

3. Online Simulation: Students can explore online drawing tools that allow them to practice dimensioning lines virtually.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 1**

**Strand:** Communication

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1. Draw the lines used for dimensioning in drawings.

2.Enjoy drawing the different lines used in dimensioning in drawings.

**Key Inquiry Question(s):**

- How can you draw the different types of lines used in dimensioning?

**Learning Resources:**

- Top Scholar Pre-Technical Studies, pg 142

- Drawing instruments (ruler, pencils, erasers)

- Drawing books

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review the content from the previous lesson on the importance of drawings in engineering and design.

- Guide learners to read and discuss relevant sections from the provided learning resources, focusing on understanding dimensioning and its significance in technical drawings.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Types of Lines

- Present the different types of lines used in dimensioning: extension lines, dimension lines, and leader lines.

- Discuss characteristics and purposes of each line type as depicted in the learning resources.

**Step 2:** Demonstration

- Show a demonstration of how to draw each type of line on the board.

- Emphasize clarity and neatness, as these are crucial for technical drawings.

**Step 3:** Group Activity

- Divide the class into small groups or pairs.

- Each group will discuss and read the steps listed in the resource for drawing extension lines, dimension lines, and leader lines.

**Step 4:** Practical Drawing Exercise

- Each learner will practice drawing the different types of lines on their drawing paper.

- Once completed, learners will share their drawings with peers for feedback and compare techniques.

**Conclusion (5 minutes):**

- Summarize the key points covered in the lesson, such as the functions of each line type and why dimensioning is important in drawings.

- Conduct a quick interactive activity where learners identify and name the lines in sample drawings shared by the teacher.

- Preview the next topic, which could involve more advanced drawing techniques or the application of dimensioning in real-world contexts.

**Extended Activities:**

- Encourage learners to find an object around them and create a simple technical drawing of it, applying dimension lines to showcase the measurements.

- Provide additional resources or online tutorials that offer further practice on dimensioning in technical drawings.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 2**

**Strand:** Communication

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1. Outline the standard rules that guide dimensioning in drawing.

2. Discuss the standard rules that guide dimensioning in drawing.

3. Use drawings to illustrate the rules that guide dimensioning in drawing.

4. Acknowledge the standard rules that guide dimensioning in drawing.

**Key Inquiry Question(s):**

- Which rules guide dimensioning in drawing?

**Learning Resources:**

- Top Scholar Pre-Technical Studies pg 143-144.

- Drawing instruments.

- Pictures.

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by asking students what they remember about drawing and its importance in communication.

- Guide learners to read and discuss the relevant content from pages 143-144 of the learning resources, emphasizing understanding of dimensioning and its importance.

**Lesson Development (30 minutes):**

**Step 1:** Understanding Dimensioning

- Explain the concept of dimensioning and its purpose in technical drawings.

- Engage students by asking them about their prior knowledge or experiences with drawing, leading into dimensioning.

**Step 2:** Identifying Dimensioning Rules

- In pairs, have students refer to the images in their books and identify at least three dimensioning rules.

- Encourage them to write down their findings and prepare to share with the class.

**Step 3:** Group Discussion

- Organize students into small groups where they share their identified rules and discuss why each rule is important.

- Ask each group to formulate a concise explanation of one of the rules they discussed.

**Step 4:** Illustrating Dimensioning Rules

- Students will choose one rule and create a drawing that illustrates that rule effectively.

- Allow time for students to present their drawings and explain their chosen dimensioning rule to the class.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson regarding dimensioning and its rules.

- Conduct a brief interactive quiz or question session to reinforce the main topics covered, using students’ drawings as discussion points.

- Preview the next session's topics, inviting students to consider how they might apply the rules of dimensioning to real-world objects they encounter.

**Extended Activities:**

1. Real-Life Application: Have students find objects at home or school and create their dimensioned drawings, applying at least three of the rules discussed.

2. Research Project: Assign students to research different professions (like engineering or architecture) where dimensioning is critical and prepare a short presentation.

3. Dimensioning Challenge: Create a fun competition where students measure and dimension objects around the classroom, using their drawing instruments and evaluating each other’s work.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 3**

**Strand:** Communication

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1. Identify the forms of dimensioning as used in drawing.

2. Discuss the forms of dimensioning as applied in various drawings.

3. Illustrate the parallel, chain, and combined forms of dimensioning in their drawings.

4. Appreciate the use of these different forms of dimensioning in real-life situations.

**Key Inquiry Question:**

- Which forms of dimensioning are used in drawing?

**Learning Resources:**

- Pictures of different drawings

- Top Scholar Pre-Technical Studies book

- Drawing lesson notes

- Drawing books and instruments

- Digital devices (tablets, computers) for research

**Organisation of Learning:**

**Introduction (5 minutes):**

- Start by reviewing the previous lesson on basic drawing techniques.

- Ask students to read a passage from the learning resources about dimensioning and discuss key concepts in pairs. Highlight the importance of dimensioning in precision drawing.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Dimensioning Forms

- Present the three forms of dimensioning: parallel, chain, and combined.

- Show images or examples of each dimensioning form from the resources.

- Discuss how each form is used in drawings and what situations might call for each type.

**Step 2:** Group Exploration

- Divide the class into small groups. Each group will receive various pictures of technical drawings.

- Instruct them to identify the different forms of dimensioning used in the drawings and note their observations.

**Step 3:** Group Discussion

- Have each group discuss their findings with the class, emphasizing the differences and similarities among the three forms of dimensioning.

- Encourage peer feedback and questions to deepen understanding.

**Step 4:** Illustration Activity

- Provide students with drawing instruments. Have them create their own sketches that incorporate each form of dimensioning: illustrate one example of parallel, chain, and combined dimensioning.

- Allow students to share their illustrations with a partner to explain their use of dimensioning.

**Conclusion (5 minutes):**

- Summarize the key points about the three dimensioning forms and their applications in drawing.

- Conduct a quick interactive quiz where students match forms of dimensioning to their definitions or situations.

- Preview the next session by asking students to think about how dimensioning could be important in fields such as architecture, engineering, and design.

**Extended Activities:**

- Research Assignment: Ask students to explore a building project (like a bridge or a tower) and create a presentation on how dimensioning might have played a role in the design process.

- Real-Life Application: Encourage students to choose an object at home and create a scaled drawing of it, incorporating the different forms of dimensioning discussed in class.

- Guest Speaker: Invite a professional drafter or architect to talk about their experience with dimensioning in real-world projects.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 4**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1. Outline the steps or procedure for drawing a dimensioned figure.

2. Discuss the steps to follow in drawing a dimensioned figure.

3. Appreciate the steps to follow in drawing a dimensioned figure.

**Key Inquiry Question(s):**

- Which steps do you follow in drawing a dimensioned figure?

**Learning Resources:**

- Top Scholar Pre-Technical Studies pg 146-147.

- Lesson notes.

**Organization of Learning:**

**Introduction (5 minutes):**

- Review Previous Lesson: Start by asking the students to share what they remember from the last lesson related to technical drawing and dimensions.

- Discussion: Guide learners to read and discuss relevant content from the learning resources, particularly focusing on the definitions and importance of dimensioning in technical drawing.

**Lesson Development (30 minutes):**

**Step 1:** Identify the Figure

- Explain the importance of selecting the figure that needs to be dimensioned (e.g., a rectangle or a circle).

- Ask students: “What types of figures can we dimension?”

**Step 2:** Determine the Required Dimensions

- Discuss the dimensions needed to accurately represent the figure, such as length, width, height, and any angles.

- Provide examples of how to choose relevant dimensions for different figures.

**Step 3:** Create a Draft

- Encourage students to sketch a rough draft of their dimensioned figure. This should include lines that will guide them in the final drawing.

- Ask students to collaborate in pairs to share their drafts and give feedback.

**Step 4:** Draw the Dimensioned Figure

- Instruct students on how to finalize their sketches by adding dimensions, using arrows for measurement lines, and including dimension lines properly.

- Allow students time to present their drawings to the class and explain their choices.

**Conclusion (5 minutes):**

- Summarize Key Points: Recap the steps to follow in drawing a dimensioned figure. Highlight the importance of each step in creating an accurate representation.

- Interactive Activity: Conduct a quick Q&A session or a dimensioning quiz with students to reinforce the main topics discussed.

- Preview Next Session: Briefly introduce what will be covered in the next lesson, possibly about scaling or different types of technical drawings.

**Extended Activities:**

1. Drawing Assignment: Ask students to select an object at home or in the classroom and create a dimensioned drawing of it, using the steps learned in the lesson. They should label all dimensions clearly.

2. Peer Review Session: Organize a follow-up class where students present their dimensioned drawings, and their peers provide constructive feedback based on the steps outlined.

3. Research Project: Encourage students to explore various dimensioning techniques used in different fields (like engineering, architecture, etc.) and prepare a brief report or presentation.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 1 - 2**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Dimensioning

**Specific Learning Outcomes:**

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

1.Dimension given shapes in drawings.

2.Enjoy drawing and dimensioning different shapes.

**Key Inquiry Question(s):**

- How do you dimension different shapes in drawings?

**Learning Resources:**

- Drawings Top Scholar Pre-Technical Studies, pages 146-147.

- Drawing instruments (ruler, protractor, compass, pencils, erasers).

- Chart paper or drawing sheets.

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by asking students questions about their understanding of drawing shapes and adding dimensions.

- Guide learners to read and discuss relevant content from the learning resources, emphasizing key concepts about dimensioning and its significance in technical drawings.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Dimensioning

- Explain the concept of dimensioning: what it is, why it's important, and how it helps in understanding and creating precise drawings.

- Show examples of dimensioned drawings and discuss the elements involved in dimensioning (e.g., lines, arrows, measurement units).

**Step 2:** Group Formation and Planning

- Divide the class into small groups or pairs.

- Instruct each group to choose a shape (e.g., circle, rectangle, triangle) and discuss how they will dimension it. Each group should plan their approach before starting.

**Step 3:** Drawing and Dimensioning

- Provide drawing instruments and materials to students.

- Guide the groups in following the steps used in creating a dimensioned figure:

- Draw the chosen shape accurately.

- Use the appropriate tools to measure dimensions.

- Add dimension lines, arrows, and labels to the drawing according to standard practices.

**Step 4:** Presentation and Feedback

- Have each group present their dimensioned drawings to the class, explaining their process and choices.

- Provide constructive feedback to each group, highlighting strengths and suggesting improvements.

**Conclusion (5 minutes):**

- Summarize key points from the lesson, including the importance of accuracy in dimensioning shapes.

- Conduct a brief interactive activity, such as a group quiz or a quick drawing challenge, to reinforce the main topics.

- Preview upcoming topics, asking students to consider questions that arise from today's lesson on dimensioning.

**Extended Activities:**

- Challenge students to find an object in their home or school and create a dimensioned drawing of it.

- Encourage students to research different types of technical drawings used in various fields (engineering, architecture, etc.) and present their findings in the next class.

- Introduce basic software tools for dimensioning (if available) and allow students to explore digital drawing and dimensioning techniques.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 3**

**Strand:** Materials for Production

**Sub Strand:** Composite Materials

**Specific Learning Outcomes:**

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

1. State the importance of dimensioning in drawing.

2. Discuss the importance of dimensioning in drawing.

3. Use digital devices to search for additional information on the importance of dimensioning in drawing.

4. Embrace the importance of dimensioning in drawing.

**Key Inquiry Question:**

- Why is dimensioning applied in drawings?

**Learning Resources:**

- Top Scholar Pre-Technical Studies pg 148-149

- Digital devices

- Internet access

- Lesson notes

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a brief recap of the previous lesson on composite materials to set the context.

- Introduce today's topic focusing on dimensioning in technical drawings.

- Guided reading: Ask learners to read and discuss relevant content from the learning resources, ensuring that they understand key concepts.

**Lesson Development (30 minutes):**

**Step 1:** Group Brainstorming

- Divide the class into small groups.

- Each group will brainstorm the importance of dimensioning in drawings, listing as many points as possible.

- Each group shares one point with the class to encourage participation.

**Step 2:** Class Discussion

- Lead a discussion to elaborate on the points shared by the groups.

- Encourage students to ask questions and offer examples of where dimensioning is crucial (e.g., architecture, engineering).

**Step 3:** Internet Research

- In pairs, students will use digital devices to search the internet for additional information on the importance of dimensioning in technical drawings.

- They should find at least two new points or examples to contribute to the class discussion.

**Step 4:** Sharing Findings and Summary

- Reconvene as a whole class and have pairs present their findings.

- Facilitate a summary of the key points made during the lesson while reinforcing why dimensioning is essential in technical drawings.

**Conclusion (5 minutes):**

- Summarize the key points discussed in class:

- Understandings of dimensioning and its significance.

- Examples of how dimensioning is applied in real-world scenarios.

- Conduct a brief interactive activity such as asking students to provide one sentence on how dimensioning could affect a project they might work on in the future.

- Prepare learners for the next session by providing a preview of upcoming topics related to materials for production or related questions, such as "What are some common tools used for dimensioning?".

**Extended Activities:**

- Dimensional Drawing Activity: Students could create their simple drawings (e.g., a small object or design) incorporating correct dimensioning practices.

- Research Assignment: Students can explore different fields (architecture, mechanical design) and present how dimensioning is used in each field in the next lesson.

- Guest Speaker/Virtual Field Trip: Arrange for a professional designer or engineer to speak about their work and the importance of dimensioning in their projects.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 4**

**Strand:** Materials for Production

**Sub Strand:** Composite

**Specific Learning Outcomes:**

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

1.Develop a portfolio of various dimensioned drawings.

2.Appreciate each other's work in the portfolios.

**Key Inquiry Question(s):**

- How can you make your portfolio attractive?

**Learning Resources:**

- Dimensioned drawings (examples and templates)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Start the class by reviewing the previous lesson’s key concepts related to materials and their properties.

- Briefly introduce the importance of dimensioned drawings in design and production.

- Ask students to read a brief excerpt from the learning resources and discuss it in pairs, focusing on what makes a drawing effective.

**Lesson Development (30 minutes):**

**Step 1:** Understanding Dimensioned Drawings

- Explain what dimensioned drawings are and their role in production and manufacturing.

- Show examples of dimensioned drawings, highlighting the key components (dimensions, scales, annotations).

**Step 2:** Group Formation for Portfolio Development

- Divide the class into small groups (3-4 students per group).

- Discuss the criteria for an attractive and effective portfolio, including organization, clarity, and creativity.

**Step 3:** Portfolio Creation

- In their groups, students will create a portfolio containing various dimensioned drawings.

- Encourage students to include different styles or types of drawings, ensuring each group member contributes ideas and drawings.

**Step 4:** Presentation and Feedback

- Each group presents their portfolio to the class, explaining the ideas behind their drawings.

- After each presentation, allow classmates to provide constructive feedback focusing on what they liked and suggestions for improvement.

**Conclusion (5 minutes):**

- Summarize key points: the definition of dimensioned drawings, their components, and the importance of presenting work clearly.

- Conduct a brief interactive activity where students guess the dimensions of various items based on the drawings presented.

- Give a preview of the next session, which will include an exploration of how these drawings influence real-world production processes.

**Extended Activities:**

- Have students research real-world applications of dimensioned drawings in engineering and design.

- Assign a project where students must create a dimensional drawing of an original product idea they design, complete with specifications and an explanation of its intended use.

**Teacher Self-Evaluation:**

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**WEEK 9: LESSON 1**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Plain Scale Drawing

**Specific Learning Outcomes:**

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

1. Identify the features of a plain scale used in drawing.

2. Describe the features of a plain scale used in drawing.

3. Use digital devices to search for information on the features of a plain scale used in drawing.

4. Appreciate the features of a plain scale used in drawing.

**Key Inquiry Questions:**

- What is a plain scale?

- What are the features of a plain scale?

**Learning Resources:**

- Top Scholar Pre-Technical Studies, pg 150

- Lesson notes

- Pictures of plain scales

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review main concepts from the previous lesson.

- Guide learners to read and discuss key content from learning resources, focusing on understanding what a plain scale is.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Plain Scale

- Teacher presents an image of a plain scale and defines what it is.

- Students discuss in pairs what they think the scale is used for and its importance.

**Step 2:** Identify Features

- In small groups, learners examine the picture of the plain scale and identify its features such as the units of measurement, the scale lengths, and any divisions present.

- Each group lists down the features they find and shares their insights.

**Step 3:** Research on Digital Devices

- Guide students to use tablets or computers to search for more information about plain scales.

- They should focus on learning about the different types of plain scales and their applications in various fields.

**Step 4:** Class Presentation & Discussion

- Each group presents their findings to the class.

- Encourage questions and discussions about the features they discovered and any new insights gained from their research.

**Conclusion (5 minutes):**

- Summarize key points from the lesson, reinforcing the features of a plain scale.

- Conduct a brief interactive activity, such as a quiz or a quick drawing using a plain scale, to reinforce the learned concepts.

- Preview the next lesson, introducing concepts related to scale conversions or practical applications of scales.

**Extended Activities:**

- Create Your Own Scale: Students can create their own plain scale using graph paper and then use it to draw various objects or structures to scale.

- Field Assignment: Have students find and photograph physical examples of plain scales in their community (e.g., in libraries, engineering firms, or schools) and share them in class.

- Digital Presentations: Task students to create a digital presentation or poster that summarizes their research on plain scales, including its features, uses, and applications.

**Teacher Self-Evaluation:**

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**WEEK 9: LESSON 2**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Plain Scale Drawing

**Specific Learning Outcomes:**

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

1.Define the term "representative fraction."

2.Search for and interpret video clips on plain scales using digital devices.

3.Understand and interpret a plain scale as used in drawing.

4.Enjoy interpreting plane scales through practical applications.

**Key Inquiry Question(s):**

- How do you interpret plane scales?

**Learning Resources:**

- Video clips (related to interpreting plane scales)

- Top Scholar Pre-Technical Studies (pages 153-154)

- Digital devices (tablets/laptops)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by asking students to recall basic concepts related to measurements.

- Guide learners to read selected content from learning resources about representative fractions and plane scales for a better grasp of key concepts.

**Lesson Development (30 minutes):**

**Step 1:** Define Representative Fraction

- In pairs, have students brainstorm the meaning of "representative fraction." Ask guiding questions like:

- What do you think it represents?

- How do we use it in drawings?

- Each pair will then share their definitions with the class. The teacher will clarify and present the formal definition.

**Step 2:** Understanding Plane Scales

- Divide students into small groups. Explain plane scales and their functions in drawings.

- Provide each group with examples of drawings that use plain scales.

- Ask them to outline the steps they will need to interpret a plane scale when looking at a drawing.

**Step 3:** Video Search and Interpretation

- Using digital devices, students will search for video clips that explain how to interpret plane scales.

- Each group will briefly view a clip and take notes on key points that illustrate the process.

**Step 4:** Share Findings

- After viewing the videos, groups will reconvene to share their findings with the class about interpreting plane scales.

- Encourage group discussion where students can compare their notes and clarify any misunderstandings.

**Conclusion (5 minutes):**

- Summarize the key points discussed in the lesson, focusing on the definition of representative fractions and the steps to interpret plane scales.

- Conduct a quick interactive quiz or a few questions on the board to reinforce learning.

- Prepare learners for the next session by hinting at upcoming topics, such as practical uses of scale drawing in real-life scenarios.

**Extended Activities:**

- Home Assignment: Ask students to find everyday examples of plain scales in their environment (e.g., maps, architectural drawings) and present their findings in the next class.

- Creative Drawing Task: Have students create a simple design or map using a representative fraction, encouraging them to apply their understanding of plane scales to constructing scaled drawings.

**Teacher Self-Evaluation:**

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**WEEK 9: LESSON 3 - 4**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Plain Scale Drawing

**Specific Learning Outcomes:**

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

1. Outline the steps to follow in constructing plain scales in drawing.

2. Draw plane figures to a given scale, following the steps outlined.

3. Enjoy drawing plane figures in their drawing books.

**Key Inquiry Question:**

- How do you construct a plain scale?

**Learning Resources:**

- Top Scholar Pre-Technical Studies, pages 152-153

- Digital devices (tablets/laptops)

- Video clips on constructing plain scales

- Lesson notes

- Drawing instruments (rulers, pencils, erasers, drawing paper)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review the previous lesson on scale and measurement concepts.

- Encourage learners to read the relevant pages from the learning resources, focusing on the importance

**Lesson Development (30 minutes):**

**Step 1:** Understanding the Concepts

- In pairs, learners will watch a short video clip that explains how to construct a plain scale.

- After viewing, facilitate a discussion where pairs share what they learned from the clip. Highlight key terms and concepts from the video.

**Step 2:** Outlining the Steps

- Using their notes, learners should outline the steps to construct a plain scale.

- Encourage this to be done as a group activity where pairs contribute to create a comprehensive outline.

**Step 3:** Drawing Plane Scales

- Distribute drawing materials.

- Guide learners to draw a plain scale based on the steps they've outlined. Ensure they pay attention to measurements and precision.

**Step 4:** Peer Assessment

- Once the scales are constructed, learners will share their work within their groups.

- Each group assesses the other’s scales, providing constructive feedback, guided by the outlined steps of construction.

**Conclusion (5 minutes):**

- Summarize the key points from the lesson about constructing plain scales and the process of drawing accurately to a specified scale.

- Conduct a brief interactive quiz using questions related to the steps discussed, reinforcing the learning objectives.

- Preview the next session by posing a question about how scales can be applied in real-life scenarios to spark interest.

**Extended Activities:**

1. Create a Scale Drawing: Learners can choose an object in the classroom or outside and create a scale drawing of it, implementing different scales to see how the object changes in size on paper.

2. Group Project: In groups, learners can research different types of scales used in engineering or architecture and present their findings to the class.

3. Online Scale Game: Find and participate in online games or simulations that involve constructing and using scales, reinforcing their skills in a fun way.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 1**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Visual Programming

**Specific Learning Outcomes:**

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

1. State the meaning of visual programming and its applications.

2. Identify types of visual programming applications used in daily life.

3. Search the internet for information on visual programming applications.

4. Appreciate the role of visual programming in modern technology.

**Key Inquiry Questions:**

1. What is visual programming?

2. Which visual programming applications do you know?

**Learning Resources:**

- Lesson notes

- Digital devices (tablets, laptops, etc.)

- Computer Studies textbook

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a review of the previous lesson; engage students in a brief discussion about what they learned previously.

- Introduce the key concept of visual programming. Guide learners to peek into the relevant sections of the learning resources and facilitate a discussion to set the stage for the lesson.

**Lesson Development (30 minutes):**

**Step 1:** Defining Visual Programming

- In pairs, learners will brainstorm the meaning of "visual programming."

- Share thoughts with the class and compile a classroom definition on the board.

**Step 2:** Exploring Applications

- Learners will identify and list examples of visual programming applications they encounter in their daily lives (e.g., Scratch, Blockly, MIT App Inventor).

- Discuss how these applications help in tasks or problem-solving.

**Step 3:** Research Activity

- Using digital devices, learners will search for information on different types of visual programming applications.

- Encourage them to find at least three applications, noting down the unique features of each.

**Step 4:** Class Discussion

- Bring everyone together to share findings and discuss the applications discovered.

- Encourage students to think about why visual programming is useful and how it connects to their everyday experiences.

**Conclusion (5 minutes):**

- Summarize the key points discussed about visual programming and its applications.

- Conduct a quick interactive quiz or game (e.g., Kahoot!) to reinforce the main topics covered during the lesson.

- Provide a brief preview of the next session, hinting at exploring more advanced applications or a project involving visual programming.

**Extended Activities:**

1. Create Your Own Application: Assign students to create a simple visual programming project using Scratch or a similar platform, allowing them to apply what they've learned.

2. Visual Programming in Real Life: Ask students to write a short essay exploring how visual programming is used in various industries, such as gaming, education, or mobile app development.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 2**

**Strand:** Communication

**Sub Strand:** Visual Programming

**Specific Learning Outcomes:**

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

1. Identify the terminologies used in visual programming.

2.Discuss the meaning of the terminologies used in visual programming.

3.Use digital devices to search for information on the terminologies used in visual programming.

4.Acknowledge the terminologies used in visual programming.

**Key Inquiry Question:**

- Which terminologies are used in visual programming?

**Learning Resources:**

- Lesson notes

- Digital devices (tablets)

- Internet

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review the previous lesson related to programming concepts.

- Guide learners to read and discuss relevant content from the lesson notes, emphasizing understanding key concepts related to visual programming terminologies.

**Lesson Development (30 minutes):**

**Step 1:** Identifying Terminologies

- In pairs, learners will brainstorm and list as many terminologies associated with visual programming as they can think of.

- Each pair will share their findings with the class, and the teacher will compile a master list on the board.

**Step 2:** Research

- Using tablets, learners will be divided into small groups.

- Each group will choose 2-3 terminologies from the master list and will search online for definitions, usage, and examples of each term.

- Encourage students to use reliable sources such as educational websites.

**Step 3:** Discussion

- Groups will reconvene, and each will present their findings regarding the definitions and significance of the terminologies they researched.

- Facilitate a class discussion where students can ask questions and clarify any doubts.

**Step 4:** Acknowledgement Activity

- Conclude the lesson by encouraging students to create a visual mind map that includes the identified terminologies and their meanings.

- This mind map can be done individually or in pairs and can include drawings or symbols representing each term.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson, reviewing the terminologies and their meanings.

- Conduct a brief interactive quiz where students can represent what they’ve learned using hand signals or writing on whiteboards.

- Provide a preview of upcoming topics in programming, such as specific visual programming languages (e.g., Scratch, Blockly) and their applications.

**Extended Activities:**

- Encourage students to create a simple visual program using a platform like Scratch, employing at least five of the terminologies discussed in class.

- Have students develop a glossary of visual programming terms, illustrating each term with an example of their application in programming.

- Organize a “visual programming terms scavenger hunt,” where students look for real-world applications or examples of the terms they learned.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 3**

**Strand:** Communication

**Sub Strand:** Visual Programming

**Specific Learning Outcomes**

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

1. State the importance of visual programming in daily life.

2. Discuss the significance of visual programming in day-to-day life.

3. Use digital devices to search for information on the applications of visual programming.

4. Value the importance of visual programming in everyday situations.

**Key Inquiry Questions**

- How are computer programs used in daily life?

**Learning Resources:**

- Lesson notes

- Digital devices (tablets/laptops)

- Video clips about visual programming

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by discussing what students learned about programming and its uses.

- Guide learners to read and discuss relevant content from the lesson notes, emphasizing key concepts of visual programming.

**Lesson Development (30 minutes):**

**Step 1:** Brainstorming

- Divide the class into small groups.

- Have students share their ideas on how visual programming is part of their everyday lives by discussing examples like apps they use (e.g., games, learning tools).

**Step 2:** Research

- In their small groups, students will use digital devices to research the importance of visual programming.

- Provide guiding questions to help them focus their search (e.g., "What are some industries that use visual programming?" "How does it make programming more accessible?").

**Step 3:** Discussion

- Reconvene as a class and ask each group to discuss their findings.

- Encourage students to share what they learned and how it impacts their understanding of visual programming's role in daily life.

**Step 4:** Presentation

- Ask each group to present a quick summary of their discussions, highlighting the most important points they've discovered about visual programming.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson, reinforcing the importance and applications of visual programming in everyday life.

- Conduct a brief interactive quiz (e.g., Kahoot!) to reinforce the main topics discussed.

- Preview the next session by presenting questions for consideration, such as "What are some challenges you think visual programming might face in the future?"

**Extended Activities:**

- Create a Visual Program: Encourage students to design a simple visual programming project, such as a basic game or animation using platforms like Scratch or Blockly.

- Class Discussion Blog: Set up an online discussion platform (like Google Classroom) where students can post articles or videos about visual programming and comment on their peers' posts.

- Guest Speaker: Arrange for a guest speaker who works in the tech industry to talk about visual programming applications and career opportunities.

**Teacher Self-Evaluation:**

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| --- | --- | --- | --- | --- | --- |
| **SCHOOL** | **LEVEL** | **LEARNING AREA** | **DATE** | **TIME** | **ROLL** |
|  | **GRADE 8** |  **PRE- TECHNICAL STUDIES** |  |  |  |

**WEEK 10: LESSON 4**

**Strand:** Communication

**Sub Strand:** Visual Programming

**Specific Learning Outcomes:**

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

1. Identify the features of visual programming applications in a user environment.

2.Discuss the features of visual programming applications in a user environment.

3. Use digital devices to launch visual programming applications.

4. Enjoy launching and identifying the features of visual programming applications.

**Key Inquiry Question:**

- What are the features of a visual programming application?

**Learning Resources:**

- Lesson notes

- Digital devices (tablets, laptops)

- Projectors

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson: Briefly revisit concepts related to programming and its importance.

- Guide learners to read and discuss relevant content from the learning resources, emphasizing the understanding of visual programming applications and their features.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Examples

- In pairs, learners brainstorm and share examples of visual programming applications (e.g., Scratch, Sprite Box, Microsoft's Make Code).

- Teacher facilitates a brief discussion about why these applications are considered visual programming tools.

**Step 2:** Launching Scratch

- Each group uses tablets or laptops to launch Scratch.

- Teacher assists with any technical issues and guides learners to navigate to the main workspace where they can create a new project.

**Step 3:** Identifying Features

- Learners explore the Scratch interface, identifying key features such as the stage, sprite area, blocks palette, and scripts area.

- Groups are tasked to make a list of features and briefly describe their functions (e.g., what is a "sprite" and how does it interact with "blocks"?).

**Step 4:** Discussing Functions

- Back in their groups, learners discuss the functions of the different features identified in Scratch.

- Each group shares their findings with the class, highlighting how these features make programming more accessible and engaging.

**Conclusion (5 minutes):**

- Summarize key points: Reflect on what visual programming is and the features of Scratch that make it a user-friendly tool.

- Conduct a brief interactive activity: Students can participate in a quick quiz using a tool like Kahoot! to reinforce concepts discussed.

- Prepare learners for the next session: Introduce the upcoming topics, such as creating a simple project in Scratch, and encourage students to think about what they would like to create.

**Extended Activities:**

- Creative Project: Learners can create a short animation or game using Scratch at home. Encourage them to experiment with various features they discovered in class.

- Research Assignment: Students can research another visual programming application and prepare a short presentation on its features and functionality, which they will present in the next class.

**Teacher Self-Evaluation:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SCHOOL** | **LEVEL** | **LEARNING AREA** | **DATE** | **TIME** | **ROLL** |
|  | **GRADE 8** |  **PRE- TECHNICAL STUDIES** |  |  |  |

**WEEK 11: LESSON 1- 4**

**Strand:** Communication in Pre-Technical Studies

**Sub Strand:** Visual Programming

**Specific Learning Outcomes:**

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

1. Create instructions to solve problems using visual programming applications.

2. Enjoy creating sequential instructions using visual programming applications.

**Key Inquiry Question:**

How do you create sequential instructions using visual programming software?

**Learning Resources:**

- Digital devices (tablets/laptops)

- Internet access

- Visual programming software (e.g., Scratch)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a brief review of the previous lesson on problem-solving in physics, highlighting how visual programming can aid in this process.

- Discuss the importance of clear instructions in programming and problem-solving.

- Introduce the learning resources and explain how they will be used in today’s lesson.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Visual Programming

- Show a short introductory clip on Scratch or similar software that illustrates its interface and basic functionalities.

- Engage students in a discussion about the key features of visual programming. Ask guiding questions like "What is visual programming?" and "How can it help us solve problems?"

**Step 2:** Research and Exploration

- In pairs, have students search for video clips or tutorials online about creating instructions in visual programming.

- Encourage them to pay attention to how sequential instructions are formed.

**Step 3:** Collaboration and Creation

- Using the visual programming software, students will collaboratively create a small project (e.g., a simple animation or interactive story) that includes sequential instructions to achieve a specified goal (e.g., making a character move across the screen).

- Circulate the room to provide assistance and encouragement.

**Step 4:** Presentation and Assessment

- Each pair will present their project to the class, explaining their process and the sequential instructions they used.

- Classmates can ask questions, providing immediate feedback and reinforcing learning.

**Conclusion (5 minutes):**

- Summarize the key points made during the lesson: the importance of sequential instructions in programming, how visual programming can be used to solve problems, and the excitement of creating projects.

- Conduct a brief interactive quiz or group discussion to reinforce the main topics learned.

- Provide a teaser for the next lesson, focusing on how programming can relate to real-world physics problems.

**Extended Activities:**

1. Create a Mini-Game: Encourage students to create a simple game using Scratch where players must solve physics-based problems (e.g., using gravity to make a character jump).

2. Explore More Tutorials: Have students find and share one new tutorial on visual programming that interests them, explaining what they learned to the class.

3. Debugging Exercise: Challenge students to intentionally create a project with a bug in it and have their peers find and fix it, thus reinforcing troubleshooting skills.

**Teacher Self-Evaluation:**