

8

# Lesson Exemplar for TLE

Quarter 4

Lesson

3

**Lesson Exemplar for TLE Grade 8**  
**Quarter 4: Lesson 3 (Week 3)**  
**SY 2025-2026**

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| <b>Development Team</b>                                                                    |  |
| <b>Writers:</b>                                                                            |  |
| • Christopher T. Dumadag, MTTE (Mindanao State University-Iligan Institute of Technology)  |  |
| • Jan Vincent H. Leuterio, MTTE (Mindanao State University-Iligan Institute of Technology) |  |
| <b>Validator:</b>                                                                          |  |
| • Victor S. Rosales, PhD (Mindanao State University-Iligan Institute of Technology)        |  |
| <b>Management Team</b>                                                                     |  |
| Philippine Normal University                                                               |  |
| Research Institute for Teacher Quality                                                     |  |
| SiMERR National Research Centre                                                            |  |

Every care has been taken to ensure the accuracy of the information provided in this material. For inquiries or feedback, please write or call the Office of the Director of the Bureau of Learning Resources via telephone numbers (02) 8634-1072 and 8631-6922 or by email at [blr.od@deped.gov.ph](mailto:blr.od@deped.gov.ph)

| I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A. Content Standards</b>                               | Demonstrate an understanding of the consumables and component parts in industrial arts services.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>B. Performance Standards</b>                           | The learners perform simple diagnostics and simple troubleshooting in industrial arts services.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>C. Learning Competencies and Objectives</b>            | <p><b>Learning Competency</b></p> <ul style="list-style-type: none"> <li>• Discuss the component parts of industrial arts services.</li> </ul> <p><b>Learning Objectives</b></p> <p>At the end of the lesson, the students are expected to:</p> <ol style="list-style-type: none"> <li>1. Identify and describe the parts of a residential structure, such as roof, wall, floor, stairs, doors, and windows.</li> <li>2. Recognize the parts of a water system, including piping, valves, pumps, water heaters, and fixtures, for both hot and cold-water distribution, and comprehend their functions in supplying potable water throughout a building.</li> <li>3. Identify key components of a sewerage system, including pipes, fittings, drainage fixtures, septic tank, and vent system, and comprehend how they function together to manage wastewater effectively.</li> </ol> |
| <b>D. Content</b>                                         | <ul style="list-style-type: none"> <li>• Parts of a Residential Structure</li> <li>• Water System Cold Water</li> <li>• Water System Hot Water</li> <li>• Drainage-Waste-Vent System</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>E. Integration</b>                                     | Integrating parts in construction services means using different pieces to build things like houses and roads. This approach connects with important goals we're working towards. First, by designing buildings that save water and have clean toilets, we're helping ensure everyone has access to clean water and sanitation (SDG 6). Second, when we use new materials and clever ways of building, we're not only making things better but also helping the environment (SDG 9). Lastly, by making buildings that use less energy and can withstand floods, we do our part to fight climate change and ensure communities are stronger (SDG 13). These efforts help us create a world where everyone has what they need, where we use resources wisely, and where our planet stays healthy for generations to come.                                                               |

## II. LEARNING RESOURCES

10 Different types of plumbing fixtures and their uses. (2023, July 3).

<https://www.rochesterdrainritemn.com/10-different-types-of-plumbing-fixtures-and-their-uses>

Brenniman, G. R. (2020). Potable water. *Encyclopedia of Earth Science*, 492–492. [https://doi.org/10.1007/1-4020-4494-1\\_265](https://doi.org/10.1007/1-4020-4494-1_265)

Cambridge Dictionary. (2023, May 31). *residential*. @CambridgeWords. <https://dictionary.cambridge.org/us/dictionary/english/residential>

Domestic water heating - Energy Education. (n.d.). [https://energyeducation.ca/encyclopedia/Domestic\\_water\\_heating](https://energyeducation.ca/encyclopedia/Domestic_water_heating)

Fajardo Jr., Max (2000). *Plumbing Design and Estimate*. 5138 Trading. Quezon City.

Fajardo, Max Jr B. (2000) *Simplified Construction Estimate* 3<sup>rd</sup> ed. Manila: 5138 Publishing

Parts of a House: Get To Know Every Part of Your Home | Hippo. (2024). Hippo.com. <https://www.hippo.com/learn-center/parts-of-a-house>

Temperature and pressure relief valves. (n.d.). <https://www.watts.com/products/plumbing-flow-control-solutions/relief-valves/temperature-and-pressure-relief-valves>

What is a Drain-Waste-Vent (DWV) System? (2019, October 4). Sobieski Services | DE, NJ, PA, MD.

<https://www.sobieskiinc.com/blog/what-is-drain-waste-vent-dwv-system/>

Vent system Definition. (n.d.). Law Insider. <https://www.lawinsider.com/dictionary/vent-system>

### Video Resources.

AMRE Supply. (2019). How Do Gas Water Heaters Work? | Repair and Replace. In *YouTube*.

<https://www.youtube.com/watch?v=BHUPFLbb8NY>

Channel, A. (2022). House construction process step by step. In *YouTube*. <https://www.youtube.com/watch?v=r-thd4PJKBw>

English, S. (2016). Components of a Building | Masonry. In *YouTube*. [https://www.youtube.com/watch?v=mWJ\\_skJd4so](https://www.youtube.com/watch?v=mWJ_skJd4so)

*House Components : ARCHYJUN*. (n.d.). *Www.youtube.com*. <https://www.youtube.com/watch?v=HMc74vl-MHk&t=26s>

How Do P-Traps Work? | Spec. Sense. (n.d.). *Www.youtube.com*. <https://www.youtube.com/watch?v=zGofkKOP2SU&t=77s>

*How Your Home Plumbing Works (From Start to Finish) | GOT2LEARN*. (n.d.). *Www.youtube.com*. Retrieved March 14, 2024, from

[https://www.youtube.com/watch?v=8jxRn-T\\_LCs&t=240s](https://www.youtube.com/watch?v=8jxRn-T_LCs&t=240s)

Paano nililinis ng Maynilad ang ating wastewater? (n.d.). *Www.youtube.com* <https://www.youtube.com/watch?v=H1afW6LsCDE>

### Suggested Readings

Fajardo Jr., Max (2000). *Plumbing Design and Estimate*. 5138 Trading. Quezon City.

Fajardo, Max Jr B. (2000) *Simplified Construction Estimate* 3<sup>rd</sup> ed. Manila: 5138 Publishing.

Fineza, B. C., Limon, M., & Pacle, A. (2017). *TLE Life Skills for Future*. The Intellegente Publishing Inc.

| III. TEACHING AND LEARNING PROCEDURE  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NOTES TO TEACHERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A. Activating Prior Knowledge</b>  | <p><b>DAY 1</b></p> <p><b>1. Short Review</b></p> <p><b>Material Identification Relay</b></p> <p>Divide students into teams. Place pictures or samples of construction materials at the front of the classroom (near the chalkboard). Teams line up at the opposite end of the classroom. When the timer starts, the first member of each team runs to the material display, identifies a material, and returns to the team. The next team member then runs to the display and identifies another material. Continue until all team members have identified a material. Teams earn points for each correct identification and lose points for incorrect identifications.</p> <p><b>2. Feedback (Optional)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p><b>Reminder:</b></p> <p>The writer only suggests the allotment of days. Teachers can determine the allotment depending on the type of learners they have and the complexity of the given topics and activities.</p> <p>The teacher can use references for the pictures from the previous lesson. The teacher can also choose any materials available in the classroom.</p>                                                                                                                                                                                                                             |
| <b>B. Establishing Lesson Purpose</b> | <p><b>1. Lesson Purpose:</b></p> <p>Understanding construction services' components is more than just combining wood and hollow blocks. It's about discovering how every nail, every board, and every tool comes together like pieces of a puzzle to create something incredible - whether it's a towering skyscraper, a cozy home, or even a community park.</p> <p>It also opens a world of opportunities. Maybe you've never thought about it, but so many cool careers are waiting for you in construction, from architects who dream up the buildings of tomorrow to engineers who make those dreams a reality.</p> <p><b>Learning Objectives</b></p> <p>At the end of the lesson, the students are expected to:</p> <ol style="list-style-type: none"> <li>1. Identify and describe the parts of a residential structure, such as roof, wall, floor, stairs, doors, and windows.</li> <li>2. Recognize the parts of a water system, including piping, valves, pumps, water heaters, and fixtures, for both hot and cold-water distribution, and comprehend their functions in supplying potable water throughout a building.</li> <li>3. Identify key components of a sewerage system, including pipes, fittings, drainage fixtures, septic tank, and vent system, and comprehend how they function together to manage wastewater effectively.</li> </ol> <p><b>2. Unlocking Content Vocabulary</b></p> <ul style="list-style-type: none"> <li>• <b>Residential</b> - a residential area or building where people live. (Cambridge Dictionary, 2023)</li> </ul> | <p>This learning exemplar will guide TLE teachers in teaching the lessons (subject topics). Teachers can adjust the activities according to the resources accessible in their school. In cases where there are too many parts in certain areas and the teacher perceives it challenging to cover within the allotted time due to the characteristics of the learners in their class, they may focus solely on discussing the most crucial parts.</p> <p>The teacher will determine the number of groups and their sizes. Additionally, the teacher will select the number of pictures to be shown and</p> |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                          |             |                |       |         |                               |                   |             |            |        |      |        |  |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------|----------------|-------|---------|-------------------------------|-------------------|-------------|------------|--------|------|--------|--|
|                                           | <ul style="list-style-type: none"><li>● <b>Drainage-waste-vent system:</b> This system is responsible for removing wastewater, removing or exhausting sewer gases, and allowing air to enter the system so the wastewater flows smoothly.</li><li>● <b>Vents System</b> - a pipe or pipes installed to provide airflow to or from a drainage system or air circulation within the system to protect trap seals from siphonage and back pressure. (Vent System Definition, n.d.)</li><li>● <b>Potable Water</b> - is defined as water suitable for human consumption (i.e., water that can be used for drinking or cooking). The term implies that the water is drinkable as well as safe. (Brenniman, 2020)</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | display other images more visible within their locality. |             |                |       |         |                               |                   |             |            |        |      |        |  |
| C. Developing and Deepening Understanding | <p><b>SUB-TOPIC 1: Parts of a Residential Structure</b></p> <p><b>1. Explicitation</b></p> <ul style="list-style-type: none"><li>● Ask the students if they saw a building or house that is newly built.</li><li>● Then, ask the following questions.</li></ul> <p><b>Guide Questions:</b></p> <ul style="list-style-type: none"><li>● What do carpenters/masons do before constructing a house?</li><li>● What are the parts of the house?</li><li>● What part of the house does the carpenter/mason first make?</li><li>● What do you think is the difference between a wooden house and concrete in terms of its parts?</li></ul> <p>The basic structure of a house is a carefully designed system that ensures its occupants' safety, functionality, and comfort.</p> <table><tr><td>Foundation</td><td>Roof</td><td>Exterior Walls</td><td>Floor</td></tr><tr><td>Framing</td><td>Interior Walls and Partitions</td><td>Windows and Doors</td><td>Floor Slab-</td></tr><tr><td>Floor Slab</td><td>Stairs</td><td>Beam</td><td>Column</td></tr></table> <p><b>2. Worked Example:</b></p> <p>Form students into groups of 3-4 members. Let them observe inside and outside the classroom. Have each group identify the parts of the classroom with the same parts of the</p> | Foundation                                               | Roof        | Exterior Walls | Floor | Framing | Interior Walls and Partitions | Windows and Doors | Floor Slab- | Floor Slab | Stairs | Beam | Column |  |
| Foundation                                | Roof                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Exterior Walls                                           | Floor       |                |       |         |                               |                   |             |            |        |      |        |  |
| Framing                                   | Interior Walls and Partitions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Windows and Doors                                        | Floor Slab- |                |       |         |                               |                   |             |            |        |      |        |  |
| Floor Slab                                | Stairs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Beam                                                     | Column      |                |       |         |                               |                   |             |            |        |      |        |  |

house. Then, after identifying the differences between the two structures, the students will be asked if there are differences in parts.

### 3. Lesson Activity: Name Me

- Divide the class into small groups.
- Provide the group with worksheets with a diagram of a house.
- Students will label each part of the house and, in two sentences, let them give its function.
- Ask them to present their answer to the class.
- Provide rubrics for the presentation.

## DAY 2

### SUB-TOPIC 2: Component Parts of a Water System (Cold Water)

#### 1. Explicitation:

Let the students identify and explain each different plumbing material.



Facilitate the discussion by asking the following questions:

- Where did you get the water supply in your house?
- Explain how the water supply works from the source to your house and each fixture.

Water is crucial for everyday life, serving various purposes, from drinking to personal hygiene, such as bathing and cleaning. Plumbing systems facilitate access to water within our homes, with the primary aim of providing adequate, safe drinking water to every household.

#### Basic Components of a Cold-Water Plumbing System

The **water supply system** transports pressurized water from either a well or underground water mains into homes, supplying all fixtures such as sinks, showers, and toilets. Typically, this system consists of two pipes: one for hot water delivery and the other for cold water.

#### Answer Key:

1. Elbow (90°)
2. Valve
3. PVC Pipe
4. Teflon Tape
5. Water Meter

The teacher is highly encouraged to look for

- The **cold-water system** is a network of pipes and fixtures that supply clean, cold water to different parts of a residential house.

**Components of Household Water Supply (Cold Water)**

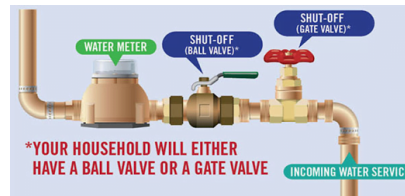
- **Supply pipe/ water supply line** refers to the larger system transporting water from the main water source to a building.
- **A service pipe or service line** is a specific supply pipe segment connecting the property's plumbing system to the main supply line.

**Water Meter:** It measures the quantity (volume) of water that passes through a pipe or other outlet to calculate payment from the water service provider.

**Main shutoff-** Every home has at least one main shutoff valve controlling water flow to the house. It is usually located near the point where water enters the house.

It is often near the water meter and is sometimes called a “gate valve” or a shutoff valve.

- Turning off the main shutoff valve stops all water passing through the system.



Norfolk County. (2017, August 17). *Water meters - Government - Norfolk County*.

<https://www.norfolkcounty.ca/living/water-wastewater/water-meters/>

**Intermediate Shutoffs** may be in pairs, one for hot and the other for cold waterlines. This may also mean they control water supply to a portion of the house.

**Fixture shutoffs** are separate stop valves connected to each faucet, toilet, and fixture. If a fixture has no stop valve, you must shut off water to part of the house before working.

**Riser** refers to the vertical supply pipe extending upward from one floor to the next.

**Branches-** are horizontal pipes that serve the faucets or fixtures.

**A water pump** is a machine that transports water from one location to another with pressure.

educational videos to supplement the lesson.

**Common Fixtures in a Residential House**

|          |                                                                    |       |         |
|----------|--------------------------------------------------------------------|-------|---------|
| Faucets  | A flush toilet (also known as a flushing toilet, water closet (WC) | Sinks | Showers |
| Bathtubs | Bidets                                                             |       |         |

## 2. Worked Example

- Facilitate discussions by asking guiding questions:
  - ✓ Why is it essential to have a water supply in-house?
  - ✓ What are the different components/ parts of a water supply system in your house?
  - ✓ How do these components work together to supply cold water to various parts of a residential house?

## 3. Lesson Activity

### Designing a Water Supply System: Student Illustration Activity

- Divide students into small groups.
- Provide each group with reference materials, such as diagrams of water supply systems, to use as inspiration for their illustrations.
- Refer to the given activity sheet.

### SUB-TOPIC 3: Component Parts of a Water System (Hot Water)

#### 1. Explicitation

- Ask the students to enumerate the components/parts of cold-water systems.
- After enumerating the components/parts of cold-water systems, ask the following questions.

#### Guide Questions:

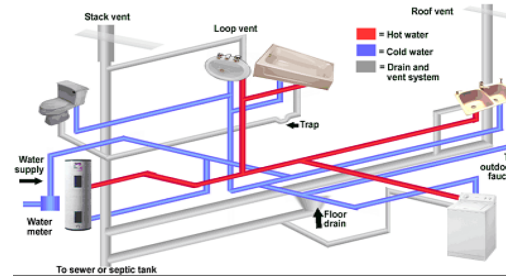
- Who among you experienced or encountered a house or hotel with hot and cold-water supply?
- What did you observe in their fixtures, especially on their valve/faucet?
- Who among you here can explain how the hot water supply works?

Certain residential, commercial, and other structures with cold and hot water supply systems. These systems, integral to the plumbing infrastructure, encompass units that store warm water. Subsequently, this heated water is distributed throughout the building to cater to individuals desiring access to hot water. This is required in sanitation standards, so hotels, restaurants, and similar establishments provide this plumbing system.

The teacher is highly encouraged to look for educational videos to supplement the lesson.

## Component Parts is a Water System (Hot Water)

*Hot water supply system planning in the plumbing system in the building — Steemit. (n.d.). Steemit.*



<https://steemit.com/engineering/@ravivanda/hot-water-supply-system-planning-in-the-plumbing-system-in-the-building>

**Pump Circuit System** - A pump is a mechanical device that supplies hot water to plumbing fixtures. A pump hot water supply is usually constructed with materials that can withstand higher temperatures without degradation or failure.

**Heater-** water heater warms cold water from a water supply pipe. It can be electric or gas.

**Hot Water Tank-** a tank used to store hot water.

### Two classifications of Hot Water Tank

- **Range Boiler Tank-** a small, cylindrical hot water tank.
- **Storage Boiler-** large hot water tank in either vertical or horizontal position.

### Temperature and Pressure Relief Valves

- Temperature and pressure relief valves are automatic safeguards for residential and commercial water heaters and hot water storage tanks. These valves are essential components, ensuring the protection of hot water supply tanks and heaters by regulating temperature and pressure levels ((Temperature and Pressure Relief Valves, n.d.)

**Hot Water Pipe-** the pipe that withstands hot water supply, such as copper pipes and PPR pipes (Polypropylene Random Copolymer pipes)

**A mixer tap/faucet** merges hot and cold-water streams through a single spout, allowing the user to adjust the temperature using one or two controls. Blue indicates that the water flowing will be cold, while red signifies hot water.

### 2. Worked Example

- Provide the group with a picture of the components of a hot water system.

The teacher may emphasize the safety provisions in the hot water system.

- Encourage students to examine the pictures and let them identify and understand the function of each part.
- Once completed, have each group present their answer.
- Allow time for questions and feedback from classmates, promoting discussion and collaboration.
- Conclude the activity with a brief reflection period.

### **3. Lesson Activity: The Journey of a Hot Water Droplet**

- Divide the class into small groups.
- Each group will draw a large diagram of their hot water system on paper or a whiteboard, labeling all the parts and illustrating how water flows and is heated.
- Groups will present their diagrams to the class, explaining the journey of a water droplet from the source, through the heating process, and to the tap.
- Refer to the given worksheet.

## **DAY 3**

### **SUB-TOPIC 4: Component Parts of Drainage-Waste-Vent System**

#### **1. Explicitation:**

Let the students discuss the components of cold and hot water supply. Then, after ensuring that they are already knowledgeable about it, proceed to ask the following questions.

#### **Guide Questions**

- Where does your human waste from your comfort room go?
- How about the waste from your fixture beside the water closet?
- What is the purpose of the trap under your kitchen sink?

Another objective of a plumbing system is to remove and discharge human waste and other substances from the building into the public sewer or septic tank.

#### **Drain-Waste System**

- The water system concludes at fixtures like toilets and sinks. As drained water is not pressurized, it flows through the pipes and exits into either the city sewer or a private disposal system due to the force of gravity.

#### **Vent Systems**

- Allows sewer gas to exit while ensuring that atmospheric pressure remains stable inside drainpipes, thus preventing the traps from being emptied.

**The Drainage System Should Accomplish the following:**

1. Fast waste removal with a minimum probability of leakage and stoppage of the drain.
2. To prevent the entry of vermin obnoxious gases into the house from the piping system,

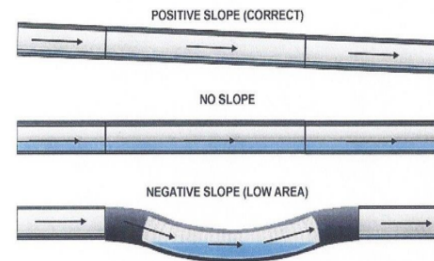
**Waste is classified into two types:**

1. **Solid waste**- the water closet discharges it.
2. **Liquid Waste**- it comes from various fixtures

**Two Types of Drainage Piping**

1. **Soil Pipe**- pipes that convey waste coming from the water closet.
  2. **Waste Pipe**- any pipe conveys waste from various fixtures other than the water closet.
- The Drainage Installation is Sometimes Referred to as **DWV**, which means  
**D**-Drainage of solid waste.  
**W**- Waste coming from various fixtures other than the water closet.  
**V**- Refers to ventilation of the piping system.

- The optimal orientation for a horizontal waste pipe is to install it with a slope of 2%. This means the pipe is inclined at a rate of 2 centimeters per meter of its length. For example, a 3-meter waste line would incline 6 centimeters (3 meters x 2 centimeters/meter = 6 centimeters).



*How to Calculate Drain Pipe Slope - Engineering Infinity | Facebook - husale.2024cheapsale.ru.*  
 (n.d.). Husale.2024cheapsale.ru.  
<https://husale.2024cheapsale.ru/content?c=drain+pipe+no+slope&id=7>

**Stack**- is the vertical main of a system of soil, waste, or vent pipe.

**Soil Branch**—A pipe installed horizontally with lateral or vertical connections that receive the discharge of the water closet, with or without additional plumbing fixtures.

**Note:** A "riser" refers to a vertical pipe carrying potable water, while a "stack" is a vertical pipe containing soil, water, or vents.

**Septic Tank**—A receptacle or vault collects organic waste discharge from the house sewer. The primary function of a house sewer is to liquefy and precipitate solid waste, purifying odorous materials.

**Sludge**- A semi-liquid substance accumulated at the bottom of the septic tank.

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                         | <p><b>Scum-</b> a floating substance in the septic tank. It is a lighter material that rises to the water's surface in the septic tank.</p> <p><b>Trap</b>—a fitting used to stop sewer gas and odor from entering your home, such as a P-trap, Bottle Trap, Floor Trap /Nahni Trap, or Q Trap.</p> <p><b>Cleanout</b>—A sewer cleanout is a pipe, or pipes equipped with a cap that allows access to the sewer line and facilitates the removal of blockages.</p> <p><b>2. Worked Example</b></p> <ul style="list-style-type: none"><li>• Divide students into small groups.</li><li>• Provide each group with a worksheet with guide questions.<ul style="list-style-type: none"><li><input type="checkbox"/> Where does your waster waste go after using the toilet and kitchen sink?</li><li><input type="checkbox"/> Do you have a septic tank? What does a septic tank do?</li><li><input type="checkbox"/> What is the importance of having a piping system that collects our waste from the different fixtures?</li></ul></li></ul> <p><b>3. Lesson Activity: Title: Exploring Drain Waste Vent Systems</b></p> <ul style="list-style-type: none"><li>• Divide students into small groups.</li><li>• Provide each group with a worksheet containing a simple diagram of a DWV system with missing labels.</li><li>• Refer to the given worksheet.</li></ul> |  |
| <p><b>D. Making Generalizations</b></p> | <p><b>DAY 4</b></p> <p><b>1. Learners' Takeaways</b></p> <ul style="list-style-type: none"><li>• Show this picture to the students and ask them to explain the components of construction services based on what they learned.</li></ul> <div></div> <p>Pelle, D. (2021, September 11). <i>The 3 Types of Plumbing Systems (It's More Logical than it Looks!)</i>. 1-Tom-Plumber.</p> <p><a href="https://www.1tomplumber.com/types-plumbing-systems-home/">https://www.1tomplumber.com/types-plumbing-systems-home/</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |

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|  | <p><b>2. Reflection on Learning</b></p> <p><b>Reflection Paper</b></p> <ul style="list-style-type: none"> <li>Let the students recall what they learned about the given topics.</li> <li>Let them reflect on how they can contribute to achieving SDGs 6, 9, and 13.</li> <li>They may write it on a piece of paper.</li> </ul> <p><b>SDG 6: Clean water and sanitation</b><br/> <b>SDG 9: Industry, Innovation, and Infrastructure</b><br/> <b>SDG 13: Climate Action</b></p> |  |
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| IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NOTES TO TEACHERS                                                                                                                                                                |
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| <b>A. Evaluating Learning</b>                                          | <p><b>DAY 4</b></p> <p><b>1. Formative Assessment</b></p> <p><b>Multiple Choice:</b> The students will take the 10-item quiz about Component Parts in construction services.</p> <ol style="list-style-type: none"> <li>What part of a house provides support and stability to the entire structure?<br/>a. Roof      b. Wall      c. Foundation      d. Windows</li> <li>Which part of a house typically separates one room from another?<br/>a. Roof      b. Windows      c. Doors      d. Walls</li> <li>What part of a house allows natural light to enter and provides ventilation?<br/>a. Foundation      b. Roof      c. Window      d. Floors</li> <li>Which part of the building transfers vertical loads from a ceiling, floor, roof slab, or beam to a floor or foundation?<br/>a. Window      b. Column      c. Beam      d. Door</li> <li>Which part of a house serves as the protective covering over the top of the structure?<br/>a. Foundation      b. Roof      c. Walls      d. Floors</li> <li>Which refers to a receptacle or vault to collect organic waste discharge from the house sewer?<br/>a. Compost pit      b. Septic Tank      c. Sewerage      d. Tunnel</li> <li>What is the vertical main of a soil, waste, or vent pipe system?<br/>a. Stacked      b. Stack      c. Riser      d. Stock</li> <li>If you want to wash the middle private part of your body, what plumbing fixture will you use?<br/>a. Faucet      b. Bidet      c. Bibb      d. Toilet</li> </ol> | <p><b>Answer key:</b></p> <ol style="list-style-type: none"> <li>b</li> <li>d</li> <li>c</li> <li>b</li> <li>b</li> <li>b</li> <li>b</li> <li>b</li> <li>d</li> <li>d</li> </ol> |

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|                                | <p>9. What system carries water under pressure from the well or underground mains into the house and to all fixtures, such as the sink, showers, and toilet?<br/> a. Waste System   b. Drainage System   c. Plumbing System   d. Water System</p> <p>10. What is the connotation of a drainage system?<br/> a. VWD                      b. WDV                                      c. VDW                      d. DWV</p> <p><b>2. Homework</b></p> <ul style="list-style-type: none"> <li>Let the student draw their dream house with the plumbing system.</li> <li>Show them some samples for their reference.</li> <li>Provide rubrics for scoring.</li> </ul> |                            |                             |                                                                                                                                                                                                                                                                                                                              |
| <b>B. Teacher's Remarks</b>    | <i>Note observations on any of the following areas:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Effective Practices</b> | <b>Problems Encountered</b> | <p>The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement and other related stuff.</p> <p>Teachers may also suggest ways to improve the different activities explored/ lesson exemplar.</p> |
|                                | <b>strategies explored</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            |                             |                                                                                                                                                                                                                                                                                                                              |
|                                | <b>materials used</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            |                             |                                                                                                                                                                                                                                                                                                                              |
|                                | <b>learner engagement/ interaction</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |                             |                                                                                                                                                                                                                                                                                                                              |
|                                | <b>Others</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |                             |                                                                                                                                                                                                                                                                                                                              |
| <b>C. Teacher's Reflection</b> | <p><i>Reflection guide or prompt can be on:</i></p> <ul style="list-style-type: none"> <li><u>principles behind the teaching</u><br/> What principles and beliefs informed my lesson?<br/> Why did I teach the lesson the way I did?</li> <li><u>students</u><br/> What roles did my students play in my lesson?<br/> What did my students learn? How did they learn?</li> <li><u>ways forward</u><br/> What could I have done differently?<br/> What can I explore in the next lesson?</li> </ul>                                                                                                                                                                 |                            |                             | <p>Teacher's reflection in every lesson conducted/ facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.</p>                                                                                                                                       |