

TECHNICAL DRAWING/TECHNOLOGY AND DESIGN DEPARTMENT

TECHNOLOGY & DESIGN

SENIOR ONE

INSTRUCTIONS

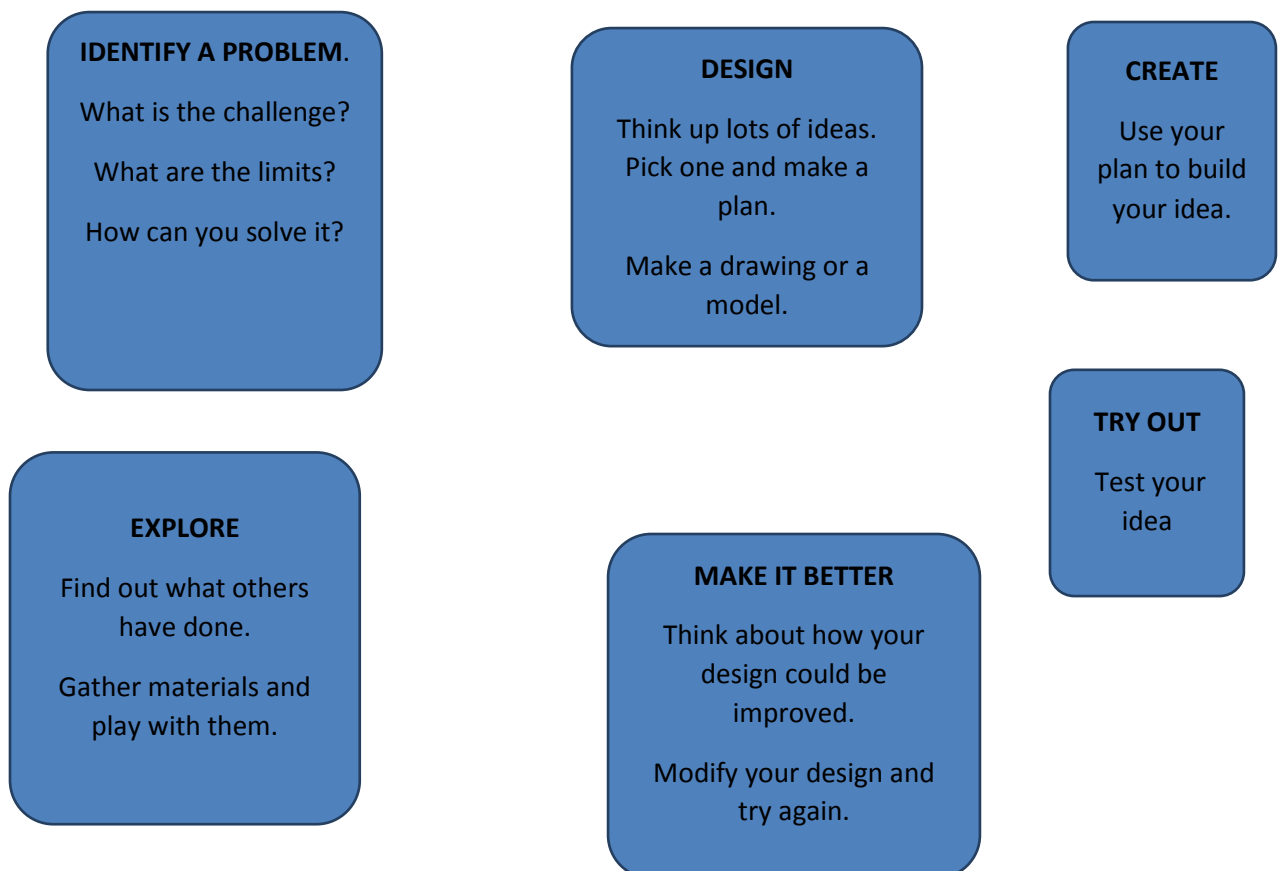
Learners should write the notes in their books then attempt the activity given.

THE DESIGN PROCESS

The design process looks at basic design techniques required to generate ideas and actions necessary to satisfy identified community need(s).

We use essential tool and materials to design and produce the article(s) required to solve community challenges.

THE DESIGNPROCESS CHART



The **design process** is a series of steps a designer follows to come up with a solution to a problem.

Many times the solution involves planning a product that meets a certain criteria and / or accomplishes a certain task.

With reference to the chart on the previous page:

EXPLANATION OF THE DESIGN PROCESS.

PROCESS	EXPLANATION
ASK	Identify the societal problem (need) i.e. lack of safe drinking water. Define the constraints of the problem. These are the [possible causes of the problem. • Scarce water sources • No laid water pipes from the national supply lines. • No boreholes. • Wells not constructed.
IMAGINE	Brainstorm the possible solutions. • Apply to the National water company to lay pipes from the supply lines to the affected areas. • Request local authorities to construct wells in the affected areas. • Request government authorities to construct boreholes in the affected area. • Encourage water harvesting. • Design systems of drawing water from the ground. • Encourage local water purification systems. Choose the most feasible solution(s) depending on many factors i.e. cost, availability of materials, ease of making and maintaining, size of community. • Design water harvesting schemes • Dig shadoof • Design simple and water purification technology.

Choose one of the solutions identified and explain the factors that affect the design of the solution you have chosen, putting in consideration the community need.

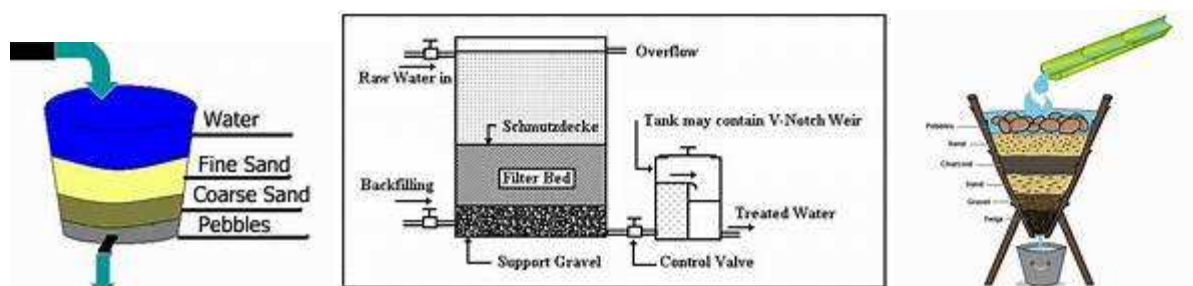
Choosing the water sand water purifying equipment, the factors that affect its design are;

- Cost of construction
- Availability of materials
- Ease to make
- Maintenance costs
- Reliability technology
- Durability
- Size of community
- Filter

Identify the materials required to make the equipment chosen.

- Water pump
- Loam and clay soil
- Pebbles
- Sands (fine & coarse)
- Water collection container
- Purifying container

Make a model of the technology and evaluate the model against the design specifications. Examples of models are shown below.



Identify any improvements that can be added to the model for proper functioning, these could be;

- Larger purification container
- Large clean water collection container
- Clean water outlet
- Raw water supply pump

Use the model to test ideas in design i.e. obtain clean water from the model.

Activity 2.2: Practicing the design process.

1. Identify a pressing societal need.
2. Generate possible solutions required to solve the societal need.
3. Select the most suitable solution from those identified and with aid of a sketch, illustrate this solution.
4. Briefly explain the factors that guided the design of the solution chosen.

END