TECHNOLOGY
TERM 4
PROCESSING/ BIAS IN AND IMPACT OF TECHNOLOGY

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UNIT 1 REFUGEES
INVESTIGATE EMERGENCY SITUATIONS THAT CAN LEAD TO PEOPLE BECOMING REFUGEES

People who travel from one place to another are called migrants. If they cannot return to their own country, they become refugees. They abandon their homes for many reasons. A refugee is someone who flees from danger in his or her country. The person leaves their country to seek shelter or protection elsewhere. This happens during times of civil unrest, war or natural disaster. Once a refugee has crossed the border, he or she seeks asylum. Asylum is the protection given by one country to the citizens of another country.

Some people want to earn better wages and others are forced to leave for their own safety. Some people are afraid to stay in their homes because they have been persecuted for reasons of race, religion, nationality, belonging to a particular social group or not agreeing with the government. People can become refugees because of political unrest or because they are desperate for work. Many people have been forced out of their homes because of violent political conflict. Sometimes people in a country are forced to leave their homes because of a disaster, such as flood or fire. These people are referred to as being internally displaced. For example, an earthquake on 12 January, 2010 caused the people of Haiti to lose their homes. They became internally displaced people. A “tent town” was erected to house the people of Haiti until their homes were rebuilt. These organised temporary shelters are called refugee camps.
Environmental factors can be a cause of migration. Migration happens if food supplies dwindle because of overgrazing, soil erosion or when forests are cut down. Lack of water and overpopulation also play a role in this.

Natural disaster such as earthquakes, floods and huge fires can cause people to migrate and become refugees. Some refugees are stateless. This means that they do not belong to any country as they have spent their lives moving from one country to another and therefore have no official nationality.

CLASS DISCUSSION – ACTIVITY 1 INVESTIGATE EMERGENCY SITUATIONS

Have a group discussion and one learner acts as the scribe and jots down ideas and answers and the group report back.
1. Find out what causes people to become refugees. Read through the notes again.
2. What sort of problems do you think refugees have to face when they first flee from their homes? Name any three.
3. What mix of people would you usually find in a refugee camp?
4. What are their needs for shelter and safety?
5. What are their needs for food, water and health?
6. What is the difference between a refugee and an internally displaced person?

ACTIVITY 2- EXPLAIN THE MEANING OF THE WORDS BY WRITING DEFINITIONS FROM THE DICTIONARY OR NOTES OR FROM THE INTERNET AND GOOGLE.

1. migrate
2. persecuted
3. conflict
4. refugee
5. abandon
6. asylum
7. internally displaced
ACTIVITY 3 - READ AND ANSWER THE FOLLOWING QUESTIONS IN YOUR WORKBOOKS.

1. Where do people flee to when it becomes unsafe at home or in their own country of birth or where they grew up?
2. What is a refugee camp?
3. Do all refugees and internally displaced people go to refugee camps? If not, suggest where they might go.
4. Explain what an asylum seeker is.

UNIT 2 INVESTIGATING AND DESIGN SKILLS

PROCESSING FOOD: EMERGENCY FOOD

The processing of food has been done by different societies for many thousands of years. Processing food is done in order to keep the food from becoming old, stale or rotten, and to keep it from being eaten by animals such as mice and rats. There are many different processing methods that can preserve food and keep it nutritious.

ACTIVITY 4: INVESTIGATE THE TYPES OF FOOD THAT CAN BE SUPPLIED TO REFUGEES.

You have to choose between the following:

1) What type of food item can be used to prepare a nutritious meal?

   OR

2) What type of food item can be used to prepare a nutritious food parcel?

SCENARIO: GROUP DISCUSSION AND REPORT BACK

One hundred refugees are living in a shelter. There are men, women and children in the camp. They have wood to make a fire, but almost nothing to eat. They need food badly. The food they need must be nutritious and tasty. There is no refrigeration or electricity.

1) In groups, discuss and find answers to the following questions and report back to the class.
a) How do people live in a refugee camp?
b) What kind of resources do they have?
c) What is the environment like?
d) How long will they have to stay there?
e) How healthy are they?
f) What kind of food do they need?

Fig. 1 Dried fruits

One problem that refugees face every day is having food to eat and safe water to drink. Organisations that help provide food for refugees know that fresh, unprocessed food keeps the body healthy and is also the cheapest food. But, raw food takes time to cook. So, processed food would be a better choice for a refugee camp in view of the conditions and people living in the camp. Food is suitable if it:

- Provides nutrients that the body needs to grow and stay healthy.
- Is easy to prepare when tools and space to cook food are limited.
- Doesn’t spoil easily.
- Can be cooked on a fire as wood is available for heating.
- Is familiar to the people receiving it.
- Is relatively cheap.

ACTIVITY 5: DESIGN BRIEF

Write a design brief for a meal for 100 refugees in a refugee camp. Work with a partner and write your answers in your workbooks.

Your design brief must meet the following criteria:

a) It must be short
b) The problem must be mentioned  
c) The purpose of the intended solution must be included  
d) Which meal you have decided to prepare?  
e) What cooking equipment and facilities do you have available?  
f) What preparation will be required?  
g) How will the meal be transported and served to the refugees?  

Total: 15 marks

Ingredients – any of the food substances that are combined to make a particular dish or meal.  
Inexpensive – something that does not cost a lot of money.

CASE STUDY - TASTIFEED  
Read the case study of a very special product that fights malnutrition.

Tastifeed is a food paste made of peanuts. It contains calories and vitamins specially manufactured to re-nourish starving children. The product may not look like much. It is a little foil packet filled with a soft sticky substance. However, people say that it is magic and works wonders. Starving children on a Tastifeed diet gain weight quickly. They often go from almost dying to being healthy within a month.

The ingredients are peanut paste, vegetable oil, powdered milk, sugar, vitamins and minerals. Tastifeed is often used as a treatment for emergency malnutrition cases. It helps with rapid weight gain, which can mean the difference between life and death for a young child.

According to the manufacturer, Tastifeed consists of a peanut paste with sugar, vegetable fat and skimmed-milk powder. It is enriched with vitamins and minerals. It can be stored for 24 months without refrigeration. Tastifeed is a food that is ready to use. It can be eaten straight from the sachet. The product makes it possible to treat children suffering from severe malnutrition without putting them in the hospital.
Malnutrition kills 5 000 children every year, or one child every 6 seconds. Why are so many children dying? Because they cannot get the protein, vitamins and minerals that their young bodies need.

Doctors without Borders say it finally has something that can save millions of these children. Tastifeed is a simple product that can be used to save lives.

UNIT 3
SEA RESCUE INSTITUTION- INVESTIGATION

We will investigate clothing worn by people in specialised occupations. These people have to wear special clothing because of the work they do. We are going to find out what textiles are used to make the clothing worn by fire-fighters and people from the NSRI.

The NSRI is the National Sea Rescue Institute where workers save people from drowning in the sea.

People who rescue sailors, fishermen and other people who get in danger at sea need special clothing. People get into dangerous situations when the sea is rough and unpredictable. It can also become windy and icy cold. They need protective clothing that is waterproof and wind resistant to keep their bodies dry and warm.
Waterproof clothing is covered with a waterproofing material such as rubber, PVC or wax. Waterproof covering on clothing stops water from passing through to the fabric underneath. It keeps people warm and dry. You can also use waterproofing fabric spray on clothing to repel water.

**PVC** – abbreviation for polyvinyl chloride; a plastic that is widely used because of its effectiveness and properties of flexibility and resistance to elements such as fire and water.

**Fabric** – cloth; typically produced by weaving or knitting textile fabrics.

**TEXTILES USED TO MAKE CLOTHING WORN BY FIREFIGHTERS**

People who serve the community by fighting fires have a dangerous job. They have to work in very high temperatures. Fire fighters have to work well as a team and help each other when they are fighting fires. They need clothing that will protect them from burning. Their clothing must also protect them from the water they use to extinguish fires.
ACTIVITY 6- RESEARCH ABOUT TEXTILES

Choose one of the following topics. The topic research can be done in class or at home. Report back to the class. It can be done individually or with one peer from class.

1) Find out what textiles you must use to make clothing that security guards and police wear.
2) Find out what textiles you must use to make the clothing that NSRI workers wear.
3) Find out what protective clothing doctors will use when they are operating.
4) Find out what protective clothing mine workers must wear.

MINI-PAT- (MINI PRACTICAL ASSESSMENT TASK)
The background for this Mini-Pat is shelters for refugees. We will focus on the properties of materials and how we can change materials to make new products.

IMPACT OF TECHNOLOGY: INDIGENOUS TECHNOLOGY

Two of our basic needs are food and shelter. We need shelter to protect ourselves from the weather and criminals. So, let us have a look at how African indigenous people used to build their houses and also what building materials and techniques they used.
The huts and homesteads\(^1\) of South African indigenous\(^2\) people have different designs. They also have different shapes and are decorated in different ways. The straw beehive-shaped huts of Zulus in Kwazulu-Natal are different from the geometric patterns painted on the walls of Ndebele houses in the Northern Province. The houses are different because the people who build them have different ideas about the type of shelter they need. There are also different kinds of building material available in different areas. Traditionally all the building materials were natural. Building styles have changed over the years, but the raw material and the environment still plays a role in the design and building process.

**INVESTIGATION SKILLS: TYPES OF HOUSING**

In the central interior of South Africa, Basotho and Batswana farmers designed and developed cone-cylinder homes. Some of these homes have a veranda around them.

In South African indigenous houses, the whole structure is usually plastered on the inside and the outside. Ndebele people decorate their huts with designs. They outline the windows, doors and wall edges in whitewash and geometric designs. They use earth colours, black and blue. These creative and distinctive houses tell of the Ndebele’s traditional way of life.

In parts of Kwazulu-Natal, people living in the mountainous areas use grass to build their homes. These houses demonstrate an excellent example of agricultural design. The whole

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\(^1\) Homesteads - a single building, or collection of buildings grouped together on a large agricultural holding  
\(^2\) Indigenous - something that originates naturally from a region
house is made of grass. The people use available material to build a shelter that is well insulated and well ventilated.

A Xhosa home is a round hut with a thatched roof. Everybody helps to build a new home. The men make a framework of branches. The women then plaster the walls with mud and thatch the roof. Several families build their houses in a group. Sometimes designs are painted on the outside of the house.

**ACTIVITY 7: MATERIALS AND BUILDING TECHNIQUES**

Investigate materials and building techniques that South African indigenous people use to construct houses in the rural areas. Choose any of the following indigenous groups.

**Xhosa, Zulu, Ndebele, Venda, Tsonga, Tswana, North Sotho, South Sotho**

Show how the indigenous people have chosen to build their houses, the techniques they use and the building materials they use. Working in groups, do the following:

a. Investigate the type of structure of the home.
b. Identify the materials used for the walls.
c. Identify the materials used for the roof.
d. Investigate where the raw materials came from,
e. Investigate the role tradition played in the way houses were designed and how they were placed in the community.
f. Investigate how people designed the house to make the structure strong and sturdy.
g. When you have done your research, make a summary on an A-4 page. Write the name of the topic at the top of the page. Put all the A-4 pages together and make a book. Create an interesting cover and present it to the class.

OR:

Use your tablets to design a slide show power point presentation on one of the groups. Type all of the information and use pictures, drawings and colour designs to make your slide show colourful and interesting and present it to the class.

**INFORMAL SETTLEMENTS**

Squatter camps, also known as shanty towns, are informal settlements.

Hoping to find employment and income, thousands of people from rural areas have moved into towns and live in make-shift dwellings or shacks. Migrant workers usually live together because they are used to living in communities in rural areas. Informal settlements develop on open land between suburbs, on empty plots in industrial areas or on the edge of cities. Building materials in informal settlements usually consist of materials the homeowners collect at rubbish dumps. They also use materials that have been thrown away. The building technique is to construct one-roomed shacks. The people use rope, wire or anything they can find to hold the walls together. They use large stones, bricks, logs and old car tyres or heavy pieces of scrap metal to hold roofing material down. They line the walls with newspaper. Sometimes they line the floor with inexpensive linoleum.
INVESTIGATE: WHAT CHEMICALS CAN WATERPROOF A TEXTILE LIKE CANVAS?

Shack fires and natural disasters such as floods or earthquakes may create the need for emergency shelters. Refugees usually stay together in a group where they get shelter, food and medicine.

The shelter provides a place to sleep. It is often a tent made from canvas. If the canvas is not properly waterproofed, it will deteriorate quickly. If you touch the canvas on the inside, water will soak through. Water, sun and other elements can ruin any outdoor fabric.

Mildew is a problem for all outdoor cloth. When canvas gets wet, dries out and gets wet again repeatedly, mildew appears. When we waterproof canvas, we prevent mildew and dry rot from forming. The canvas will then last longer and give better protection against the rain, cold, heat and wind. So we will be looking at chemicals we can use to waterproof a textile such as canvas.

Waterproofing canvas can make it last longer and function better. It also helps to keep us warm and dry when we use it as shelter against cold and rainy weather. Different products are available and you need to know how they must be used.

- Read the warning labels. Some products contain dangerous chemicals.
- When you test products, always wear protective eyewear and gloves.
- Only test products in the presence of an adult or teacher.
- Look for a solution that is safe, as all waterproofing methods are not safe.
BURNING CHARACTERISTICS OF VARIOUS TEXTILES

Fireproofing describes the technique of making materials or structures more resistant to fire. It does not necessarily mean that the item cannot ever burn. It just provides some resistance. Think of some characteristics of fabrics, e.g. velvet, satin, knitted fabric, felt, hessian, polyester or canvas. What do these fabrics feel like, for example: fluffy or furry, thick or thin, rough or smooth, shiny or dull, uneven or even, cold or warm, transparent, stretchy, soft or hard.

Which fabrics
a) Do not tear easily?
 b) Do not crease easily?
 c) Are waterproof?
 d) Do not crinkle easily?

ACTIVITY 9: SKETCH IDEAS FOR AN EMERGENCY SHELTER

1) Write a design brief with specifications and constraints for producing a textile canvas suitable for use in emergency shelters. Study this checklist for your design brief:

- The problem, need or want to solve
- It is short and to the point
- It is clear and simple
- You know what to do
- It is a general description
- It identifies all the given restraints
- It identifies all the specifications.

2) Sketch design ideas for an emergency shelter. You must be able to transport the shelter to, and build it, at the place where the people have become homeless.

Ask yourself the following questions:
- How big will it be?
- What kind of material will I use?
- What structure will I build?
- Who will use it?
- What are their needs?
• How safe will it be?
Develop different ideas and then choose the best idea. Say why the idea that you finally chose is the best idea for a shelter for refugees. Present your sketches and explain your ideas to the class.

An upright tent with a rain cover