



LESSON PLAN TEMPLATE: INDIRECT METHOD



Grade: 5

Learning Area: Natural Science and Technology

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Grade: 5

Learning Area: Natural Science and Technology

Topic: Planet Earth, The Earth moves

SILENT SITTING:

- The educator can use any method e.g. light meditation OR visualisation accompanied by soft background music

VALUE: Truth, Love, Peace

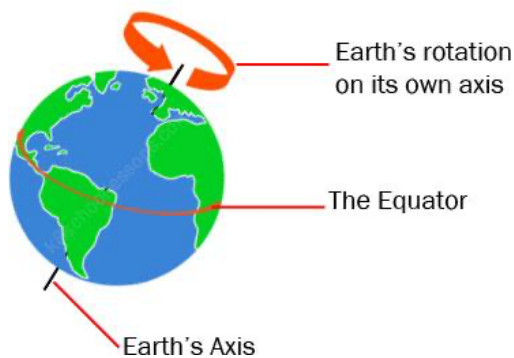
SUB VALUE: Sincerity, Trust, Friendship, Consideration, Calm, Dignity

CONTENT:

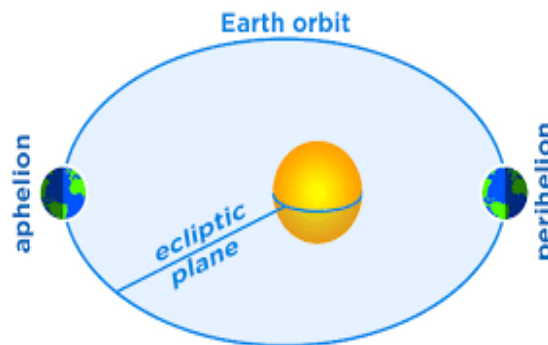
A) AS PER CURRICULUM (May use your required template as per National protocol or this part)

*Movement of the Earth
Study the diagram below.*

A.
Earth's Rotation



B.



1. Refer to diagram A
 - 1.1 Describe the type of movement at A.
 - 1.2 What do we call this movement?
 - 1.3 How long does it take to complete this movement?
 - 1.4 List one consequence of this movement.
 - 1.5 Explain the possible consequences if this movement gets :
 - a) Slower
 - b) Faster

2. Refer to diagram B
 - 2.1 Describe the type of movement at B.
 - 2.2 What do we call this movement?
 - 2.3 How long does it take to complete this movement?
 - 2.4 What are the consequences of this movement?
 - 2.5 Explain what would possibly happen if the Earth deviates from its orbit?
(Think about the distance of the earth in relation to the sun, the distance of the earth in relation to the moon and the distance of the earth in relation to other planets).



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B) INTEGRATION:

1. *Within Learning Areas*

(This example can also be used to integrate with Life Skills)

The earth rotation does not get faster or slower. The earth never deviates from its path around the sun. In this way the earth-moon-sun-planets relationships are kept in balance. Similarly, if we deviate from the path of truth, right conduct, peace, love and non violence that God has prescribed for us, we will have to face the consequences of our actions. We can learn a lot from this and improve our behaviour.

Study the scenarios below and state possible consequences for each action as well as what would have been the right thing to do in such a situation. An example is given below:

Action	Possible consequence	The right thing to do
I found a R50,00 note on the school playground and put it in my pocket	You would have to face the consequences of being dishonest. Your friends may not have seen you but God did.	Give the money to the teacher to investigate who may have lost it and to return it to its owner.

Activity

Action	Possible consequence	The right thing to do...
1. Your best friend looked very sad. You asked her about it. She told you that she was sad because her parents were going to be separated. You couldn't wait to tell the rest of your friends about it.		
2. The boy seated next to you in class took your maths book without permission and began copying your answers. You slapped him for taking things without permission.		
3. Jessie, your neighbour's cat had the habit of coming into your yard and drinking your cat's milk. You've had enough		



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of that. One day, you caught Jessy by the scruff of his neck and shoved him back into the neighbour's yard hoping never to see him again.		
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2. *Between Learning Areas*

Life skills and English

Quotation: "What goes around, comes around"
Discuss this in relation to what we have learnt from the scenarios above.
Write down another expression which is similar in meaning to the above quotation.

3. *Into The Universe/ Cosmos/ Creation*

Just as God created the Earth and moon to never deviate from its path, so too did He create man to never deviate from the path of truth, righteousness, peace, love and non-violence.



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Grade:5

Learning Area: Natural Science and Technology

Topic: Metals and non-metals – Properties of Metals

SILENT SITTING:

Guided visualization accompanied by soft background music.

VALUE: Truth, Love, Peace

SUB VALUE: Discrimination, Friendship & consideration, Self-control & Self-esteem

CONTENT:

A) AS PER CURRICULUM (*May use your required template as per National protocol or this part*)

Properties of metals (as per CAPS curriculum)

(CAPS: South Africa National Curriculum and Assessment Policy Statement)

Metals can be hard, shiny, malleable and ductile. They can melt at high temperatures and some metals can tarnish.

Lesson objectives: Pupils will be able to:

1. Name the 3 necessary components of a circuit
2. State the purpose of each of the components

Properties of metals




Metals can be hard, shiny, malleable and ductile. They can melt at high temperatures and some metals can tarnish .

Activity

Use your dictionary to find the meaning of each of the following words: malleable, ductile, tarnish. Can you name any metal/s that do not tarnish?

Case Study (values-based integration)

Mrs Pillay left her gold chain with a pendant and 3 copper bracelets on the dressing table in her bedroom. She went on holiday and forgot to put them away in her jewellery box. When she returned after 2 months she found that her gold chain and pendant still looked good and shiny but the copper bracelets had tarnished. She was quite disappointed. She telephoned her friends who gave her some advice on how to clean the bracelets. One said, use water. The second friend advised her to clean them in milk while the third friend suggested that she use lemon and water to make the bracelets shiny again. Not knowing who to believe, Mrs Pillay decided on the following:

A	B	C
She dipped the first bracelet in a solution of lemon and water for 3 hours before wiping it with a clean, dry cloth	She dipped the second bracelet in a glass of milk for 3 hours before wiping it with a clean, dry cloth	She dipped the third bracelet in a glass of water for 3 hours before wiping it with a clean, dry cloth
		
RESULTS The bracelet was clean and shiny	RESULTS The bracelet was somewhat clean	RESULTS The bracelet still looked tarnished.

Get together in your group to complete the following activity

1. If you were a metal, would you prefer to be gold or copper? Discuss your answer with your group.
2. What do you think it means when we say to someone: "Your character has been tarnished?"
3. List the ways in which you could tarnish your character.



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4. Draw two-sided arrows to link the statements that match (←→)
- | | |
|-----------------------------|--|
| a) Scenario A reminds me of | friends with some good values who are able to help me to correct some of my negative qualities. |
| b) Scenario B reminds me of | friends with whom I can make no improvement in my life. I should perhaps keep away from them. |
| c) Scenario C reminds me of | friends with lots of good qualities. If I join them my character will shine as brightly as theirs. |
5. Explain the meaning of the following phrase: “ We are as good as the company we keep”.
6. What do you think it means when someone says : “ Your character must be as good as gold”?

B) INTEGRATION:

1. *Into The Universe/ Cosmos/ Creation*

There's an endless movement of all of God's creation in the cosmos. This is how evolution and change occur. When we stop making good use of our time and energy, we become lazy, tarnished beings.

C) SELF REFLECTION:

- Explain the meaning of the following phrase: “ We are as good as the company we keep”.
- What do you think it means when someone says: “ Your character must be as good as gold”?

A metal, once tarnished, needs to undergo a rigorous process of cleaning and polishing so that it can return to its shiny state. In the same way, when we acquire bad habits, we must put in a lot of time and effort in order for us to get rid of the bad habits and become better human beings.

What do you do to change your bad habits?



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Grade: 5

Learning Area: Natural Science and Technology

Topic: Plant and Animals on Earth

SILENT SITTING:

Guided visualisation with background music. It would be preferable to use sounds of nature e.g. water, birds chirping etc.

VALUE: Peace/ Right Conduct

SUB VALUE: Sharing and Caring/ Respect

CONTENT:

A) AS PER CURRICULUM (*May use your required template as per National protocol or this part*)

NOTE TO THE EDUCATOR: Please note that this is not a full lesson plan as is required for Natural Science and Technology. This document presents ideas for integrating Human Values into the secular school NST curriculum. The ideas presented here can be incorporated into the INTEGRATED NST lesson plan covering THREE WEEKS.

In this section we cover:

Sub-Topic	Objectives
Many different plants and animals	Identify different plants and animals Group leaves according to certain criteria

Plants and animals in their habitats	<p>Conduct an investigation</p> <p>Draw conclusions from the data</p> <p>Categorize information</p>
Plants and animals living in different habitats in the world	<p>Name four different types of habitats</p> <p>Give examples of plants and animals living in these habitats</p> <p>Describe some characteristics of these plants and animals</p>

B) INTEGRATION:

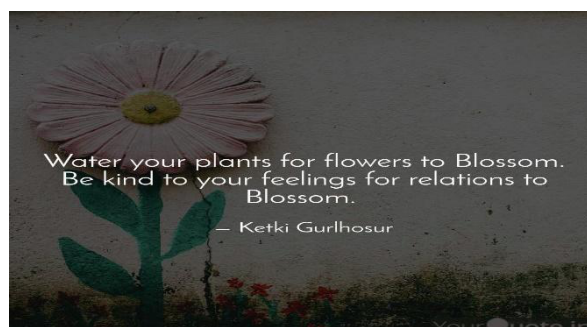
1. *Within Learning Areas*

Sub-topic: many different plants and animals

1.1 *Plants*

HUMAN VALUE	SUB-VALUE
Right Conduct	Duty
Peace	Contentment, self confidence

Plants do not rely on the validation of other plants with whom they live, to be who they are (self-confidence). They are happy with the purpose they have been given and they work towards fulfilling that purpose every day (duty). From this we learn that people too should not rely on others to validate who they are. They must know and understand their purpose, just like plants do and work towards fulfilling that purpose every day. Once we recognise our purpose and work towards it, we will find great peace and contentment knowing that we're blooming just the way we should be.



Educator to discuss the above quotation with learners.



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1.2 Animals

Human value	Truth	Love	Peace	Non-violence
Sub-value	Fairness	Compassion, sharing	Discipline harmony	Social justice

Playing fair is a skill that we are taught when we are young. This includes how to share and take turns. A lion will share its catch with the rest of its pride. A zebra will happily share its grazing field with each other. Wolves, jackals, foxes and dogs (all canids) have a distinct code of play which includes playing, by the rules, clear communication and even apologising when necessary. From this we learn that we must be mindful of how we interact with others, to share and to wait our turn. Like animals, we too live in groups which we call families, community, society etc. With fairness, sharing, understanding, tolerance and discipline we will be able to live in society in harmony. Different animals living together in the same habitat often coexist quite peacefully, each knowing its own boundaries and expectations in terms of its behaviour (discipline). It is not uncommon to find animals of different species befriending each other and taking care of and protecting each other from danger. There are many examples of a mother of one type of animal taking care of the young/baby of another animal. In the same way, people too can coexist peacefully (in harmony) if each person behaves in the correct manner. As human beings we should also learn to take care of each other.

Song: English country garden by Jimmie Rodgers [YouTube]

(Educator plays the song. Has a discussion about the variety of plants and animals that coexist in a flower garden highlighting the human values brought out in the song)

1.3 Grouping leaves according to certain criteria

Variety of leaves

Value	Right conduct	Non - violence	Peace
Sub-value	Healthy living Self- help skills Self sufficiency	Appreciation	Sense control

- Break the class into five groups



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- Educator presents each group of learners with leaves of different shapes and sizes: e.g. geranium, coriander, spinach, mint, gum, aloe, rose, celery, etc. (ensure that the leaves are of various shapes, sizes and uses)

Activity



- Smell the leaves and write down your observations (Do they smell the same? Which leaf has the most appealing smell for you?)
- Touch the leaves and write down your observations (do they feel the same?)
- Look at the leaves and comment on the following:
 - Comment on the shapes of the leaves (differences).
 - Comment on the similarities of the leaves.
 - Draw sketches of three leaves.
- Did you use any of these leaves? If so, when and for what purpose?
- Do you have any of these plants in your garden? If not try growing some of them e.g. coriander, mint, spinach, roses, geraniums. Start your own little garden, take pictures and show them to the class.
- What benefits do we get from the plants from which we got these leaves?

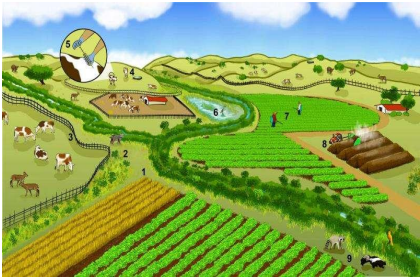

Example

Medicinal/ Health	Food/ Nutrition	Other
Aloe – skin creams, gels	Celery, spinach, coriander, mint	Rose, geranium –
Geranium – aromatherapy oils		aesthetic appeal
Rose water		
Gum – relaxation		

2. The habitats of plants and animals

Value	Love	Right conduct	Non-violence
Sub-value	Interdependence	Dependability, good behaviour	Cooperation, concern, consideration

A grassland habitat	A river habitat
 <ul style="list-style-type: none"> ● List the animals that live in this habitat. ● Name two animals and state whether this habitat provides them with their basic needs. ● How do the plants benefit from the animals? ● How do the animals benefit from the plants? 	 <ul style="list-style-type: none"> ● List the animals in this habitat. ● Name two animals and state how each is able to survive in this habitat. ● In what ways can this habitat be destroyed?

A farm habitat	A city habitat
 <ul style="list-style-type: none"> ● Describe this habitat. ● What do people need to survive in this habitat? 	 <ul style="list-style-type: none"> ● Describe this habitat. ● Do the people living in this habitat depend on any other habitat for their needs.



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2. *Between Learning Areas:*

Song: English country garden. Jimmie Rodgers [YouTube]
(educator plays the song. Has a discussion about the variety of plants and animals that coexist in a flower garden highlighting the human values brought out in the song.

3. *Into The Universe/ Cosmos/ Creation*

The universe is created on the principle of interdependence. There must be perfect harmony and balance between plants, animals and humans in order for it to function in the manner in which God intended it to. All of creation is linked in some way or the other.

c) SELF REFLECTION:

- What lessons have you learnt from plants and animals that you can practice in your life.?
- Think of ways in which you can make the habitat in which you live a better place for you and for the people who share the Habitat with you. Write them down and then devise a plan of action to implement your ideas.

Grade:5

Learning Area: Natural Science and Technology

Topic: Plants – You reap what you sow

SILENT SITTING:

This exercise beginning of meditative the

Teacher, to

Sit upright, firmly on the floor, hands on your laps with your palms facing upwards.

Breathe in (to the count of four- `1001, 1002, 1003, 1004) hold (to the count of four) breathe out (to the count of four)hold(to the count of four). Repeat breathing exercise five times.

Imagine that you are walking in a bare field with sunflower seeds in your hand. Your feet are being caressed by the soft, cool soil. One by one you release the seeds onto the soil and gently press it into the soil with your feet. It's a beautiful sunny day. The sky is blue. As you turn around to look behind you, you notice the seeds magically sprouting and growing into beautiful, slender sunflower plants. Buds begin to appear at the top of the stem and the sunflowers begin to magically open up. Rows and rows of beautiful, yellow flowers happily taking in the warmth of the sun.

You walk back between the rows of flowers, caressing them as you go along. The sunflowers turn towards you, as if to say thank you. You enjoy this sight. Now look up into the sky and say thank you to the sun for providing the rays of sunlight for the plants. Now look down into the soil and thank the soil for giving the sunflower the nutrients they need to grow and flower. As you walk out of the field, turn around once more and thank the sunflowers for the beauty they bring into the world.



must be done at the the lesson. Soft, music can be heard in background.

learners:

backs straight, feet



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Slowly turn around again and walk away from the field. Slowly open your eyes and continue to look at the plant/flower/chart in front of you (allow 30 seconds for this)

VALUE: Love, Right Conduct, Non-violence

SUB VALUE: Compassion, devotion, forgiveness, tolerance, Gratitude, Appreciation

PRAYER:

Teacher leads the prayer and the learners repeat.



QUOTATION:

Look at the beautiful message below and answer the questions based on it.



GROUP ACTIVITY BASED ON QUOTATION:

1. What does the quotation “ The day you plant the seed...is not the day you eat the fruit” mean? Discuss this with a group of your class mates and then write down the answer.
2. What fruit is shown in the picture?
3. What seed did we have to plant to get this fruit?
4. Can we plant any other fruit seed and expect to get the plant to bear this fruit?
5. If you plant a seed of hatred, can you expect to reap a reward of love? Discuss.
6. Did you ever plant a seed? If yes, share your experiences with your group. What seed was it? How did you take care of it? What was the outcome?



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INDIVIDUAL ACTIVITY :

1. List three valuable lessons we can learn from a seed?

2. Study the list below of some of the “SEEDS” that we human beings can plant :

love, compassion, hatred, forgiveness, anger, greed, tolerance, jealousy.

Rewrite these “SEEDS” in the correct column in the table below :

POSITIVE HUMAN QUALITIES	NEGATIVE HUMAN QUALITIES

3. Let's look at the cause and consequences of our actions. Match the CAUSE of the seeds we plant with the CONSEQUENCES of our thoughts, words and actions. The first one is done for you.

WHEN YOU PLANT THE SEED OF	CONSEQUENCES
FORGIVENESS COMPASSION HATRED GREED TOLERANCE JEALOUSY	you get acceptance by others you collect unnecessary material things it shows you are an insecure person you get kindness in return you become a happier person people will not respect you

(An arrow points from 'FORGIVENESS' to 'you get kindness in return')

GROUP SINGING

Learners listen to the song on a growing seed (youtube link below)

PLANTING SEEDS: A Song of Life | Empty Hands Music | nimo feat. daniel nahmod

<https://www.youtube.com/watch?v=5AmqYcWjBmc&list=RDsO2o98Zpzig&index=4>

<https://gratefulness.org/resource/planting-seeds-a-song-to-live-by-empty-hands-music/>

Planting seeds (lyrics)



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Planting Seeds - Nimo Patel *lyrics*

Written and performed by Nimesh “Nimo” Patel and Daniel Nahmod

Music Produced by Daniel Nahmod

Mixed by Brian Nicholls

Song inspired by original “Planting Seeds” song by Daniel Nahmod, 2006, from his ‘Water’ album

LYRICS

Intro:

I spent a long time runnin
I never knew then, what I know I know now,
That the fruits they always comin’
But you can’t go around just knockin’ them down
It takes a long time to showin’
We plant the seeds then, and we look at them now,
But the roots are always growin’
No matter if I’m there or never around...

Chorus:

Whatever grows will grow,
Whatever dies will die
Whatever works will work
Whatever flies will fly,
Whatever fails will fail|
What’s meant to soar will soar,
I am planting seeds nothing more

Verse 1:

Its like your whole life you’ve been training for this moment
And when the time comes you just disown it,
Meaning you just surrender don’t control it,
Not interested in the clay pots and moldin’
Or sitting next to the path, tryin’ to unfold it
Or waiting for the fruits to fall down toward ya’
You let it go and now your flowing feeling quite gorgeous
So you take steps away instead of towards it,
What a rush, feeling freedom with nothing to hold
We’ve been taught that what you touch will always turn to gold
But now we’re learning when we let it go, it overflows
With no credit to take cuz no credit is owned
A higher power working deeper when the seeds are sowed
And when the seeds are true, then they’re seeds of gold
But the real gold is joy, when life starts to flow
And when it does, you just smile, cuz now you know!



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Bridge:

I spent a long time runnin
I never knew then, what I know I know now,
That the fruits they always comin'
But you can't go around just knockin' them down
It takes a long time to showin'
We plant the seeds then, and we look at them now,
But the roots are always growin'
No matter if I'm there or never around...

[Chorus x3]



LESSON PLAN TEMPLATE: INDIRECT METHOD



Grade: 5

Learning Area: Natural Science and Technology

Topic: Cells and Batteries

SILENT SITTING:

- The educator can use any method e.g. light meditation OR visualisation accompanied by soft background music

VALUE: Truth, Non-violence, Love, Right Conduct

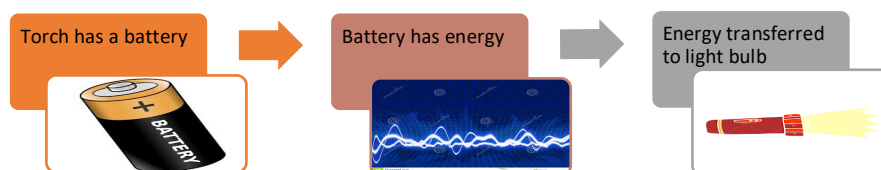
SUB VALUE: Spirit of inquiry, Self-awareness, Concern for others, Brotherhood, Sacrifice, Helpfulness, Initiative, Duty

CONTENT:

A) AS PER CURRICULUM (*May use your required template as per National protocol or this part*)

*Introduction: How does a Torch work?
Study the diagram below.*

B)



INTEGRATION:

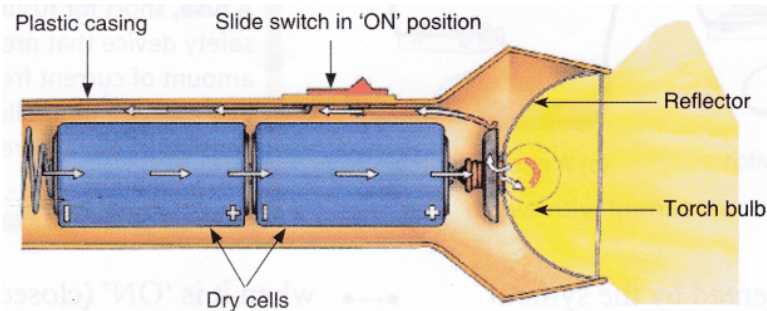
1. Within Learning Areas

Refer to the asterisk on the lesson plan.

Answer these questions (Group Work):

Activity	Values integration (truth)
<ul style="list-style-type: none"> ● Why does the torch give off light when you switch it on? ● Why does the torch stop shining when you switch it off? ● What happens to the energy in the body when you switch the torch: <ul style="list-style-type: none"> i. On ii. Off 	<ul style="list-style-type: none"> ● What was the purpose of the silent sitting at the beginning of the lesson? ● What happens when you are irregular with your silent sitting/meditation? ● Why is it important for us to ensure that we sustain our spiritual practices? ● Where do you get your energy from? ● How would you define DIVINE ENERGY? ● How do you receive DIVINE ENERGY? ● Why is DIVINE ENERGY important to you as a human being?

Electric Circuit



- a. Use the arrows to explain how energy moves in this circuit?
- b. Explain what would happen to the circuit if one battery is removed from the torch?



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2. *Between Learning Areas*

Study the following passage.

The Grade 5 class at the Peacevale Primary School were required to do a community service project for Life Skills. The learners identified 10 needy children from their school that they would like to help. They collected food items, clothing and shoes which they distributed to the needy learners. They also gave some of their personal clothing items and used some of their savings to purchase food items for distribution.

At the end of the project, the learners felt very good because they got a double blessing. Their sacrifices did not go unnoticed. Not only were they blessed by the families of the learners they had helped, but they felt in their hearts that God was very pleased with them as well.

1. In what ways was this community service project similar to an electrical circuit?
2. Discuss what would have been the possible consequences for the needy families if the Grade 5 learners did not assist them? How is this similar to removing a battery from the torch?

Note to Educator:

The above integrated activity ties up with the value of **Non-Violence** and its associated sub-values of brotherhood and concern for others as cited above. It may also be used to bring out the values of **Right Conduct** and its associated sub-values of helpfulness, initiative and duty as well as **Love** and its sub value of sacrifice.

3. *Into The Universe/ Cosmos/ Creation*

All forms of energy come either directly or indirectly from the sun. The energy present in coal came from the plants that compressed to produce the coal. These plants received their energy from the sun millions of years ago. In the same way, the energy present in oil, the energy that is used to move windmills etc. all have their origin in the sun. Hence we find that all of creation is linked.

c) **SELF REFLECTION:**

In what way does your life and behaviour resemble a circuit.
What would happen if you cut yourself off from the source (God) who is responsible for your physical and spiritual energy?