



Climate Change-We have to change!

CLIMATE CHANGE JOURNEY ACTIVITY SHEET

Name: _____

Age: _____

What will Corey's plant look like at the end of this climate journey? Circle the correct one.

Note to Teacher: Journey

Background Information

Our Climate is changing because humans have increased the amount of Greenhouse Gases (GHGs) in the atmosphere. Greenhouse Gases are actually necessary, as they help to keep the earth's surface warm by trapping the earth's heat (the greenhouse effect). Without this warmth the earth would be unbearably cold. These Greenhouse Gases (GHG's) include Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and Ozone (O₃). The problem is that their concentrations have increased dramatically in the last century due to human activity. When we burn fossil fuels to provide electricity for our homes and businesses or when we cut down trees these actions release Carbon dioxide in the atmosphere. This is making the earth very, very warm (global warming) and in turn causing our climate to change.

Some of the climate change impacts include:

1. Rising sea levels – which cause coastal erosion and flooding.
2. An increase in the intensity of hurricanes – this can cause flooding and structural damages due to strong winds and storm surge.
3. Reduced Rainfall – that can lead to drought.
4. Buts of very heavy Rainfall – that can lead to flooding.
5. An increase in temperatures – making it extremely hot.

About this Activity Sheet

This exercise is targeted to children between the ages of 4- 5 years. It allows children to understand the different elements of climate change, and the impact that it will have on our environment. In the exercise, Corey's plant will go through a series of climatic elements in the maze below and the child will make a choice about what the impact of the climate will be on the plant.

What Skills are developed?

Eye-hand coordination: As children draw a line from 'Start' to Finish, they are developing eye-hand coordination.
Problem- solving/ Making Choices: From 'Start' to Finish, there are different pathways. Children will try different paths until they find the correct one.

Left to right progression: When children read and write, they move from the left to the right. As children draw the line from 'Start' to Finish, they are moving from left to right.

Directionality: Children also learn directionality, and concretize the concept of direction. For example, when they travel from home to school, they are learning about 'to' and 'from'...hence directionality.

Additional Sources of Information

1. GOJ/ EU/ UNEP Climate Change Adaptation and Disaster Risk Reduction Project Brochures
 - Climate Change: Let's Change the way we treat our Coasts and Beaches
 - Climate Change: We have to Change
2. GOJ/ EU/ UNEP Climate Change Adaptation and Disaster Risk Reduction Project Fact Sheets
<http://myspot.mona.uwi.edu/physics/csgm/climate-resources>



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Name: _____

Age: _____

What will Corey's plant look like at the end of this climate journey? Circle the correct one.

Start →

Strong Wind

Flooding

Light Rain

Strong Heat

Heavy Rain

Clear Skies

A

B



CLIMATE CHANGE AFFECTS SEA LIFE TOO

ACTIVITY SHEET

Name: _____

Age: _____

As our climate changes, it gets hotter and our coral reefs are bleached and become unhealthy. Corey likes to swim and wants to swim to a healthy reef not affected by climate change. Where should he swim?





Climate Change-We have to change!

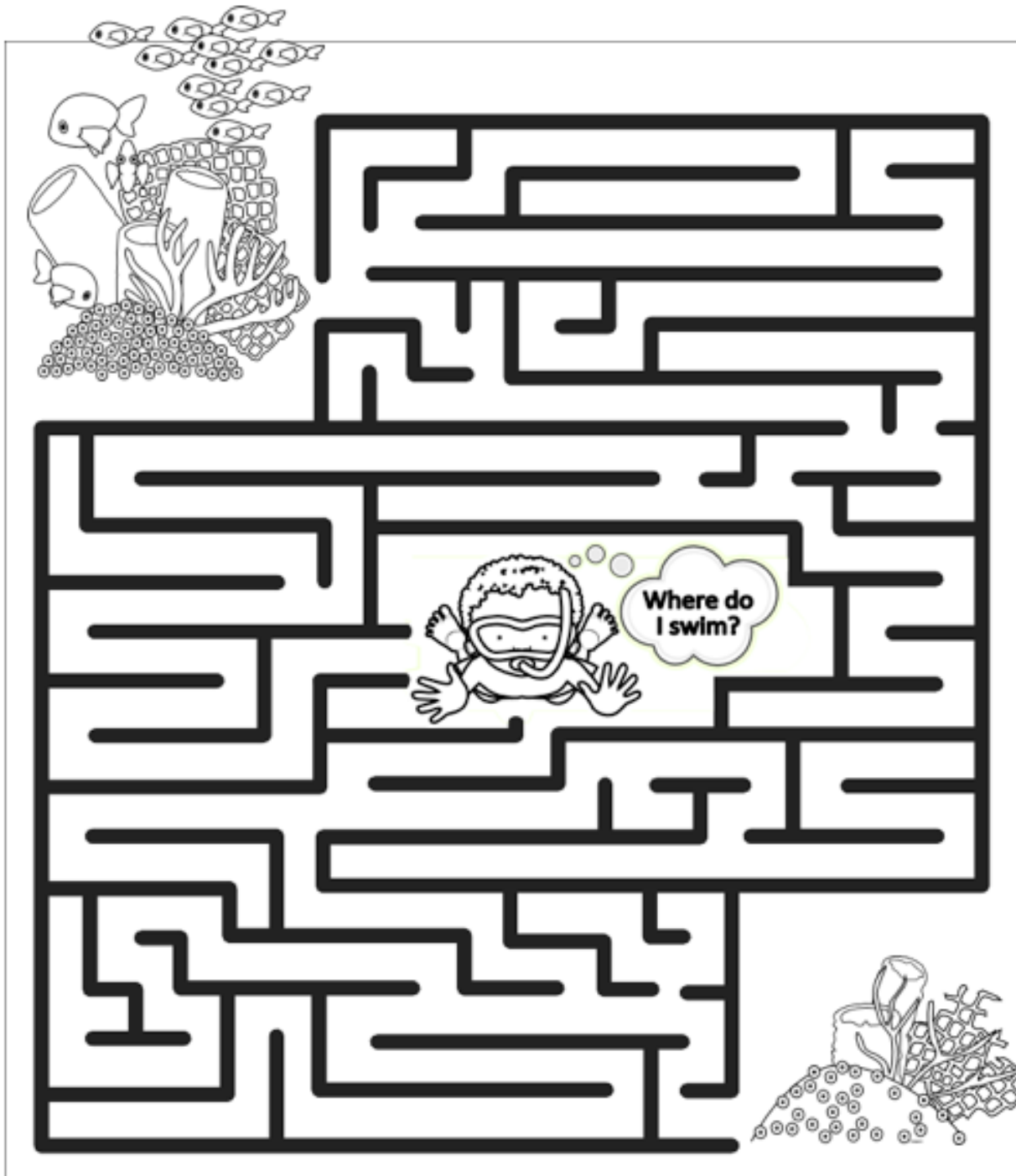
CLIMATE CHANGE AFFECTS SEA LIFE TOO

ACTIVITY SHEET

Name: _____

Age: _____

What will Corey's plant look like at the end of this climate journey? Circle the correct one.



Note to Teacher: Climate Change Affects Sea Life Too

Background Information

Our Climate is changing because humans have increased the amount of Greenhouse Gases (GHGs) in the atmosphere. Greenhouse Gases are actually necessary, as they help to keep the earth's surface warm by trapping the earth's heat (the greenhouse effect). Without this warmth the earth would be unbearably cold. These Greenhouse Gases (GHG's) include Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and Ozone (O₃). The problem is that their concentrations have increased dramatically in the last century due to human activity. When we burn fossil fuels to provide electricity for our homes and businesses or when we cut down trees these actions release Carbon dioxide in the atmosphere. This is making the earth very, very warm (global warming) and in turn causing our climate to change.

One impact of climate change is that sea temperatures have become warmer. This causes damage to Coral reefs, which provide natural habitats for fish, while preserving and protecting our shorelines. The damage to Coral reefs as a result of Climate Change is known as Coral Bleaching.

About this Activity Sheet

This exercise is targeted to children between the ages of 4- 5 years. It allows children to make choices that are either good or bad, using a maze.

What Skills are developed?

Eye-hand coordination: As children draw a line from COREY to the Reef, they are developing eye-hand coordination.

Problem- solving/ Making Choices: From COREY to the Reef, there are different pathways. Children will try different paths until they find the correct one.

Left to right progression: When children read and write, they move from the left to the right. As children draw the line from COREY to the Reef, they are moving from left to right.

Directionality: Children also learn directionality, and concretize the concept of direction. For example, when they travel from home to school, they are learning about 'to' and 'from'...hence directionality.

Additional Sources of Information

1. GOJ/ EU/ UNEP Climate Change Adaptation and Disaster Risk Reduction Project Brochures
 - Climate Change: Let's Change the way we treat our Coasts and Beaches
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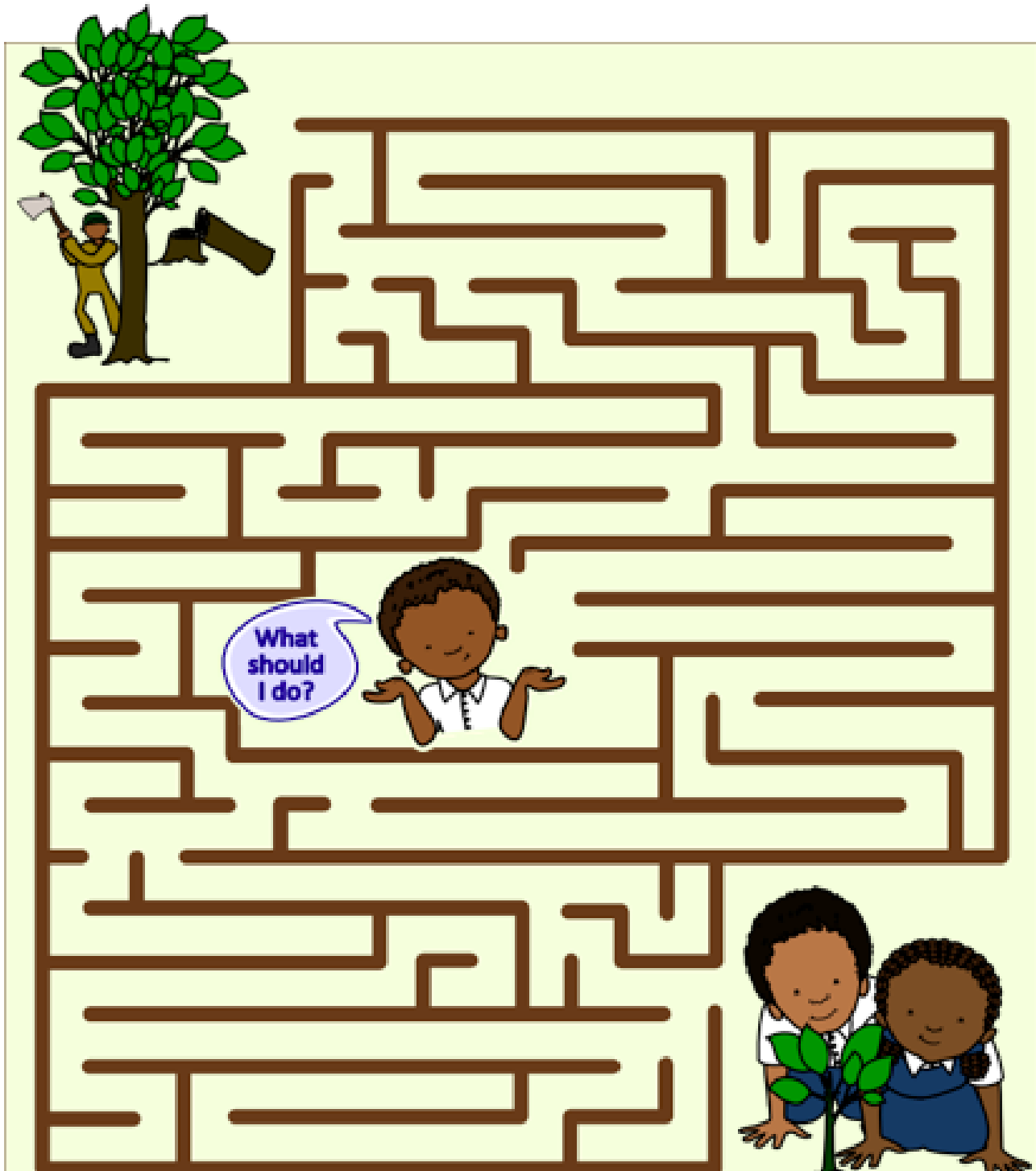


CLIMATE CHANGE GOOD PRACTICES ACTIVITY SHEET

Name: _____

Age: _____

Corey wants to do something good for the environment which will also help his community deal with climate change. Should he help the coal burner or his friends Gail and Peter?



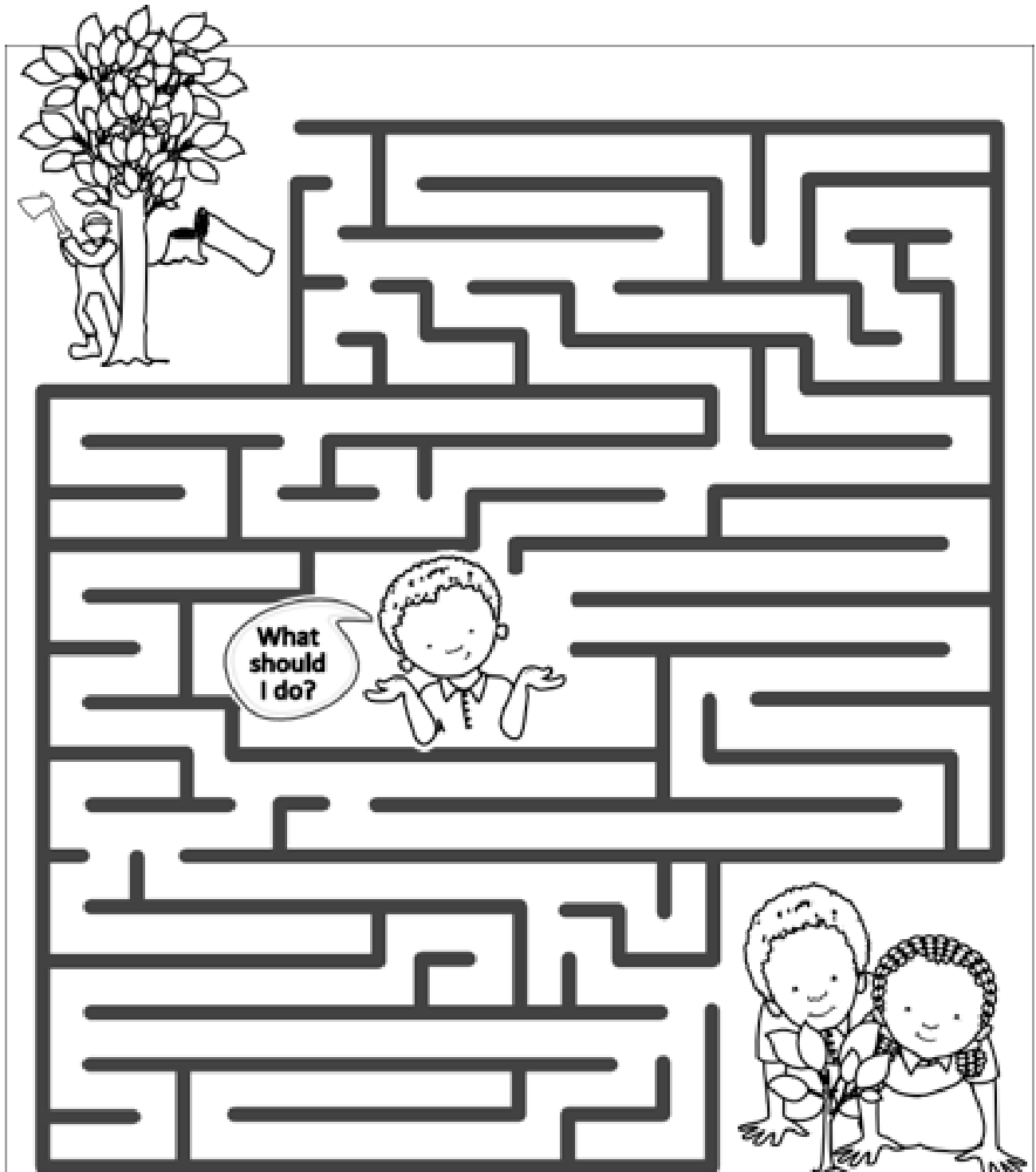


CLIMATE CHANGE GOOD PRACTICES ACTIVITY SHEET

Name: _____

Age: _____

Corey wants to do something good for the environment which will also help his community deal with climate change.
Should he help the coal burner or his friends Gail and Peter?



Note to Teacher: Good Practices

Background Information

Our Climate is changing because humans have increased the amount of Greenhouse Gases (GHGs) in the atmosphere. Greenhouse Gases are actually necessary, as they help to keep the earth's surface warm by trapping the earth's heat (the greenhouse effect). Without this warmth the earth would be unbearably cold. These Greenhouse Gases (GHG's) include Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and Ozone (O₃). The problem is that their concentrations have increased dramatically in the last century due to human activity. When we burn fossil fuels to provide electricity for our homes and businesses or when we cut down trees these actions release Carbon dioxide in the atmosphere. This is making the earth very, very warm (global warming) and in turn causing our climate to change.

One impact of climate change is changing weather patterns including more instances of drought and more intense storms and hurricanes. The combination of drought and heavy bouts of rain helps degrade soil quality and impacts agriculture. Droughts dry out the soil and the heavy rains then wash it away. Because our climate is changing, we have to change the way we live! We have to try to reduce the greenhouse gases in the atmosphere (mitigation) and we also have to learn to live with the changes in climate that are already happening (adaptation). Trees can help us with both actions. Through photosynthesis they absorb carbon dioxide (CO₂) that would otherwise be released to the atmosphere. Their roots also help to stabilize the soil and prevent it from being washed away when the heavy rains come. Planting trees are therefore a good climate change activity in addition to being just a good environmental practice.

About this Activity Sheet

This exercise is targeted to children between the ages of 4- 5 years. It allows children to make choices that are either good or bad, using a maze.

What Skills are developed?

Eye-hand coordination: As children draw a line from COREY to the forest; or COREY to plant a tree, they develop eye-hand coordination.

Problem- solving/ Making choices: From COREY to planting a tree, there are different pathways. Children will try different paths until they find the correct one.

Left to right progression: When children read and write, they move from the left to the right. As children draw the line from COREY to the where trees are being planted, they are moving from left to right.

Directionality: Children also learn directionality, and concretize the concept of direction. For example, when they travel from home to school, they are learning about 'to' and 'from'...hence directionality.

Additional Sources of Information:

1. GOJ/ EU/ UNEP Climate Change Adaptation and Disaster Risk Reduction Project Brochures
 - Climate Change: Let's Change the way we treat our Coasts and Beaches
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**GOJ/EU/UNEP CLIMATE CHANGE ADAPTATION
& DISASTER RISK REDUCTION PROJECT**

Climate Change-We have to change!



GLOBAL WARMING EXPERIMENT

Aim: To demonstrate global warming.

Background

Greenhouse gases like carbon dioxide exist in our atmosphere. They are called greenhouse gases because they cause the atmosphere to act like the glass of greenhouse. That is, the sun's rays pass through the atmosphere and heat up the earth, and then the greenhouse gases prevent the heat from leaving. Human activities like burning fossil fuels, are putting more greenhouse gases in the atmosphere. The extra greenhouse gases act like an extra layer or a blanket by trapping even more heat and warming the earth.

What you will need

2 glass containers with lids; 12 cubes of ice; 6 cups of water; 2 thermometers; 1 Plastic Bag;

What to do

Firstly, remember to ask an Adult for help! Follow instructions below.

Discussion

(1) Which thermometer recorded the higher temperature? (2) Why? (3) How did the plastic bag act like extra greenhouse gases?

Experiment Steps

Place 6 ice cubes and 3 cups of water in one jar. Do the same for the other jar and cover both lids

1



Place a plastic bag over one of the Jars. Cover it completely (greenhouse jar)

2



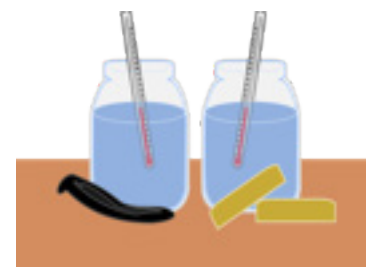
Place both jars in the bright sunlight outdoors, for one hour. Ensure they are secure and safe

3



After an hour has passed, measure the temperature in both jars using a thermometer.

4



Note to Teacher:

Global Warming Experiment

Background Information

Our Climate is changing because humans have increased the amount of Greenhouse Gases (GHGs) in the atmosphere. Greenhouse Gases are actually necessary, as they help to keep the earth's surface warm by trapping the earth's heat (the greenhouse effect). Without this warmth the earth would be unbearably cold. These Greenhouse Gases (GHG's) include Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and Ozone (O₃). The problem is that their concentrations have increased dramatically in the last century due to human activity. When we burn fossil fuels to provide electricity for our homes and businesses or when we cut down trees these actions release Carbon dioxide in the atmosphere. This is making the earth very, very warm (global warming) and in turn causing our climate to change.

Global warming = unusually high levels of warming in the earth's atmosphere/surface.

Climate Change = actual change in the earth's surface temperature over a period of time.

About this Activity Sheet

This exercise is targeted to children between the ages of 9-11 years. It is a hands-on interactive exercise that allows children to see firsthand the process of global warming and its effects on the earth's temperature. This experiment can be done between an adult and a child, or it can be done together in a class setting with many children. It is important to discuss with the child/children the results from this experiment.

Skills developed

Children will develop critical thinking skills and reasoning ability. They will gain basic scientific knowledge by understanding the process behind global warming, thus making the connection to climate change.

Additional Sources of Information:

1. GOJ/ EU/ UNEP Climate Change Adaptation and Disaster Risk Reduction Project Brochures
 - Climate Change: Let's Change the way we treat our Coasts and Beaches
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All About Climate Change

Name: _____

Age: _____

CLIMATE CRYPTOGRAM

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Help Corey fill in the letters on the line that correspond to the numbers below, to form the correct word and complete the sentence.

Climate Change is a _ _ _ _ _ problem. Our Climate is changing because
7 12 15 2 1 12

humans have increased the amount of _ _ _ _ _
7 18 5 5 14 8 15 21 19 5

_ _ _ _ _ (GHG's) in the _ _ _ _ _
7 1 19 5 19 1 20 13 15 19 16 8 5 18 5

For example, when we use _ _ _ _ _ and _ _ _ _ _
15 9 12 3 15 1 12 7 1 19

to provide _ _ _ _ _ to our homes and
5 12 5 3 20 18 9 3 9 20 25

businesses we release greenhouse gases into the atmosphere.

Greenhouse Gases are important because they keep the earth's surface warm (this is called the greenhouse effect). The problem is that too much of it in the atmosphere makes the earth too hot.



Climate Change-We have to change!

All About Climate Change

In Jamaica,

we are seeing some of the impacts of climate change. The island has experienced more intense _ _ _ _ _
19 20 15 18 13 19

and _ _ _ _ _ *like Hurricane Sandy in 2012.*
8 21 18 18 9 3 1 14 5 19

Farmers are losing their crops because of _ _ _ _ _ *or*
4 18 15 21 7 8 20

_ _ _ _ _ . _ _ _ _ _
6 12 15 15 4 9 14 7 4 5 6 15 18 5 19 20 1 20 9 15 14

has caused a lot of _ _ _ _ _ *in communities*
12 1 14 4 19 12 9 4 5 19

across the island. _ _ _ _ _
19 5 1 12 5 22 5 12 18 9 19 5

in Negril, Jamaica has contributed to the losses of our beaches.

How is climate change affecting your community?



Note to Teacher: All About Climate Change

Background Information

Our Climate is changing because humans have increased the amount of Greenhouse Gases (GHGs) in the atmosphere. Greenhouse Gases are actually necessary, as they help to keep the earth's surface warm by trapping the earth's heat (the greenhouse effect). Without this warmth the earth would be unbearably cold. These Greenhouse Gases (GHG's) include Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and Ozone (O₃). The problem is that their concentrations have increased dramatically in the last century due to human activity. When we burn fossil fuels to provide electricity for our homes and businesses or when we cut down trees these actions release Carbon dioxide in the atmosphere. This is making the earth very, very warm (global warming) and in turn causing our climate to change.

About this Activity Sheet

This exercise is targeted to children between the ages of 9-11 years. As we discuss how climate change affects Jamaica and other countries across the globe, the words in bold form part of this topic area. In the summary of information section below, there are missing words with numerals underneath them. Each letter has its own number ranging from 1- 26. Children should fill in the letters, based on the Cryptogram (number chart) below. Note that some letters have already been filled in.

Skills developed

Children are developing critical thinking as they try to associate numbers with letters to complete the correct word. While reading, they learn new words while reinforcing words they already know (so their vocabulary increases). This exercise helps with spelling, especially words that are unfamiliar to children.

Importantly, children are also associating words in the cryptogram with a particular theme or topic. While they are searching for the numbers that match the letters, they are making a connection with the topic of climate change.

Teaching Aids

To assist in explaining the concepts and words more clearly in this sheet, it would be good to use visual aids e.g. pictures, flash cards. This is because children will be introduced to words such as deforestation, landslides and sea level rise, which may best be explained through visual aids.

Additional Sources of Information:

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Answers

1	Global
2	Greenhouse
3	Gases
4	Atmosphere
5	Oil

6	Coal
7	Gas
8	Electricity
9	Storms
10	Hurricanes

11	Drought
12	Flooding
13	Deforestation
14	Landslides
15	Sea Level Rise



Adapting to Climate Change

Name: _____

Age: _____

Instructions: Read the passage below paying close attention to the bold words. When you finish reading, help Corey find the words in bold shown in the puzzle below.

ADAPTING TO CLIMATE CHANGE

Our Climate is changing, because humans have increased the amount of greenhouse gases in the atmosphere. An example of a greenhouse gas is Carbon Dioxide. When we burn fossil fuels to provide electricity for our homes and businesses it releases Carbon Dioxide into the atmosphere. The Carbon Dioxide helps to trap heat and makes the earth much hotter. A hotter earth causes our weather to change and affects things like our forests, animals and oceans. When we get more droughts or more intense hurricanes our lives are also affected.

Adaptation is all about making places safer or doing the right things to protect against the negative effects of Climate Change. There are some things that we can do to adapt to climate change. We can:



- Protect our Forests e.g. planting more trees, to replace those that were cut down especially in the watershed areas.
- Protect our Coast e.g. replanting mangroves and taking care of coral reefs.
- Be prepared for extreme weather events like

storms by listening to important weather messages on the TV/ Radio and preparing our homes with tips from the Office of Disaster Preparedness and Emergency Management (ODPEM) and the Meteorological Service of Jamaica (Met Service).



Adapting to Climate Change

R F O S S I L J T W V D Y A P
 E U H R S M E V L A A N R D R
 E E A T D E W E A T H E R A E
 F L A C L I M A T E N G E P P
 S S N E R S R O R R A A F T A
 K E J T S A O C F S C T L A R
 C G C O R A L T O H T I T T I
 H A C R H E P T R E T V T I N
 A S A P T A E I E D T E T O G
 N S C S H P P S S H T A T N H
 G E C G N I N E T S I L T S B
 E M A N G R O V E S T A T S A

What else can you do to adapt to climate change?

Fossil	Climate	Coast	Weather
Fuels	Change	Mangrove	Messages
Adaptation	Forest	Coral	Preparing
Protect	Trees	Reefs	
Negative	Watershed	Listening	



Adapting to Climate Change

Answers

R F O S S I L J T W V D Y A P
E U H R S M E V L A A N R D R
E E A T D E W E A T H E R A E
F L A C L I M A T E N G E P P
S S N E R S R O R R A A F T A
K E J T S A O C F S C T L A R
C G C O R A L T O H T I T T I
H A C R H E P T R E T V T I N
A S A P T A E I E D T E T O G
N S C S H P P S S H T A T N H
G E C G N I N E T S I L T S B
E M A N G R O V E S T A T S A