SCIENCE

BONUS

Life Science

GRADES 5-8

NAME: _____

Student Worksheet

Activity One

PRODUCERS, CONSUMERS, DECOMPOSERS
Writing a Short Essay

Based on what you have learned from the reading passages, choose *TWO PRODUCERS* and *TWO CONSUMERS* that you would like to learn more about. You may choose any organisms you wish.

Here are a few suggestions if you are stuck:

- **producers** (a cactus, a maple tree, a sunflower)
- **consumers** (a human, a monkey, a grizzly bear)

Step 1

Begin by making **TWO CHARTS** like the ones below to research and record information about the four organisms you have chosen.

Name of Producer	Where They Live	What They Depend on for Food	What Depends on Them for Food
(Producer 1)			
(Producer 2)			

Name of Consumer	Where They Live	What They Depend on for Food	What Depends on Them for Food
(Consumer 1)			
(Consumer 2)			

Step 2

Next, write a **SHORT ESSAY** using each of the column titles as the topics of the paragraphs. Introduce each of the producers and consumers, informing the readers on what you have learned about them. In your last paragraph, discuss how the producer's role in its ecosystem is different from the consumer's role.

For this activity, you may present your information in a different form if you wish. You will present the same information, but you may show it in **DIAGRAM FORM**. If you choose to do this, you should construct a diagram similar to the food chain diagrams we looked at in the reading passages. Remember to use lots of arrows to show how the organisms are dependent on others for food and energy. Don't forget to label all parts of your diagram!

NAME: _____

Student Worksheet

Activity Two

ECOSYSTEMS
Creating a Model or Diorama

1.

Choose *ONE ECOSYSTEM* from the list below.

Pick one you know very little about. If you know of another ecosystem you would prefer to create, run the suggestion by your TEACHER.

Puddle **Rainforest** **Ocean** **Handful of soil** **The Earth**

2.

Before creating your diorama, you will need to *COLLECT INFORMATION* on your chosen ecosystem.

You will be looking for the following INFORMATION:

- What does your ecosystem look like (water, trees, dirt, etc.)?
- What organisms live in your ecosystem?
- How do these organisms live and work together? How do they interact?

3.

Once you have collected this information, you are ready to begin *CONSTRUCTION*!

The PROJECT should fit into a shoebox-sized container.

You can however use any craft materials you like. Use your imagination! Here are some suggestions of materials which work well with such a project:

- Plasticine (for figures)
- Colored construction paper (for background)
- Tape, scissors • Paint, markers, colored pencils • Popsicle sticks

When designing your MODEL or DIORAMA, think about the following things:

a) How can I best show the different organisms that live together in this ecosystem?
b) Which materials should I use to best create these figures?
c) How can I best show how these organisms interact with each other?
d) How will I describe the ecosystem when I present my diorama to my class?

Enjoy your construction!

NAME: _____

Student Worksheet

Activity Three

HARMFUL MICROORGANISMS
Television News Report

You have just been hired to be a news reporter for your local TV news channel. In groups of three or four, you will form the new HEADLINE REPORT NEWS TEAM.

This week's report is called:

"HARMFUL MICROORGANISMS: HUMANS WATCH OUT!"

Together as a team, you will research **one harmful microorganism** from the list below. Focus your research on this one microorganism. This should allow you to find enough information so that you can put together a **TEN-MINUTE NEWS REPORT**.

HIV **herpes** **measles** **influenza**

In your NEWS REPORT, you should include the following information:

- Basic information about the microorganism (is it a virus, bacteria, etc.)
- How the microorganism is harmful to humans
- How it is passed from one person to another
- Suggestions and recommendations on how humans can avoid it

Before beginning your RESEARCH, spend half an hour in the evening watching a news program. While watching, think of the following things:

- How is a new topic introduced?
- How does a news team work together?
- How does the reporter use eye contact to keep the viewer's attention?
- Are pictures or any other visuals used besides talking?

For the actual PRESENTATION to the class, you should begin with...

"Good evening and welcome to the (name of news channel) **evening news. Today is** (the date)**. Our special headline report today will look at harmful microorganisms and how they can be harmful to humans. In particular, we will be looking at...**

Have fun making your report!

NAME: _____

Student Worksheet

Activity Four

IT'S A POPULATION MATCH!
Designing a Board Game

In groups of two or four (your group should be an even number) you will be *DESIGNING A BOARD GAME*.

Think back to when you last played **THE MEMORY GAME**. You flip twenty cards over so that the players can not see what is on their front side. Each card has a partner which creates a match. Each player has a turn to flip over two cards. If the cards match, the player holds on to the cards and is given an extra turn. The objective is to uncover as many matches as you can.

Now do you remember this game?

Since you are in grade school now, you will design a game that is a bit more difficult. You will use pictures of POPULATIONS as matches. Before playing the game however, you will need to design and construct it.

Part A

Use twenty square pieces of paper or cardboard (provided by the teacher) and as a team, come up with ten examples of different **populations**. Draw a picture of this population on two cards. Remember to draw the same picture on two cards so that each card has a match!

By the end of your designing, you should have **TEN population examples** on **TWENTY cards**.

Part B

Now you're ready to PLAY your game!

Here are the instructions:

1. Play against one other person, or in teams of two.
2. Flip all the cards over so that you cannot see them. Line them up in rows.
3. First player takes a turn: flip over two cards. Are they two different populations? If yes, then flip them over and the next player or team has a turn.
4. If the two populations are the same, then keep the match. You get another turn!
5. The winner is the player or team who has flipped over the most matches.

NAME: _____

Student Worksheet

Activity Five

IT'S DRAMA TIME!
Writing a Play on Photosynthesis

For this activity, you will work in groups of SEVEN.
Six of you will be actors and one of you will be the narrator.
It's time to write your play about PHOTOSYNTHESIS!

Work together as a team to write a play using DIALOGUE.
Each of you will have a part in this play.

Step 1

Divide the following *ROLES* among your team members:

The Sun Water Oxygen Carbon Dioxide Sugar Food Narrator

The narrator will be guiding the audience (your class) through the play but each actor will have lines to rehearse as well.

Step 2

Begin this activity by *RESEARCHING* the process of photosynthesis.

Remember, it is **the process where plants use sunlight, water and carbon dioxide to make food, oxygen and water**. Use books and the internet to find out more details and information about how it works.

Step 3

Once you have collected enough information, you are ready to start *WRITING* your play.

If you are stuck and you need a kick start to begin the writing, follow the outline below:

- Narrator introduces the topic to the audience
- Narrator introduces each actor
- Each actor might hold a sign or a picture to show the audience what character they are playing
- Dialogue begins: take the audience through the photosynthesis process
- Actors' dialogue should show or tell the audience what role they play in the photosynthesis process

Have fun and use your imagination. What creative costumes can you come up with which would make your play even more interesting to watch?

NAME: _____

Student Worksheet

Activity Six

TAKE A TRIP THROUGH THE WATER CYCLE!
Creating a Travel Brochure

You have graduated from school and now work as an AWARD-WINNING TRAVEL AGENT!

Your job is to **SELL HOLIDAYS AND TRIPS** to families during their summer holiday.

You have recently added a new holiday to your list of trips:
A TRIP AROUND THE WATER CYCLE!

Yes, you will need to use your imagination for this one. This is obviously not a real place to visit and you can not fly in an airplane to get there. For this activity however, you will pretend it is a real place!

When someone walks into a travel agency, they can find many brochures advertising trips and holidays. Your job is to **DESIGN A BROCHURE** that will promote this trip around the water cycle.

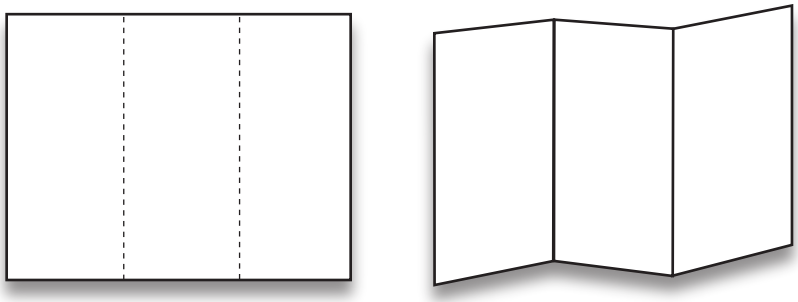
You will need to collect information about the water cycle to include in your brochure. Use books, the internet and any information you learned from the reading passages.

Be sure to include information about water as it moves through the FOUR main stages of the water cycle:

1. **evaporation** 2. **condensation** 3. **precipitation** 4. **collection**

Use colored pencils and markers to color your brochure. Someone should be able to look at your brochure and be convinced that this would be an exciting and fun holiday!

Use a regular piece of blank paper and fold it into three sections like in the diagram below. Fill in both the front and the back. You shouldn't be able to see any blank space on the page!



NAME: _____

Student Worksheet

Activity One

DESIGN A CLASSIFICATION GAME!

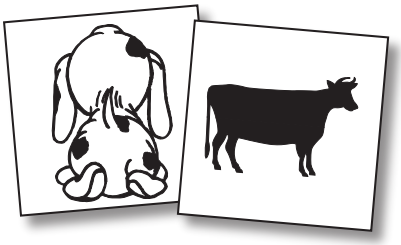
Organize yourselves in groups of 3 or 4. Together you will form a **classification design team**! Your job is to design a game that the rest of your class can play once it is complete. You have just learned about classification – what it is and how to classify something. **It is time to test the knowledge of your classmates!**

For this activity, you will need:

- **Blank pieces of paper**
- **Scissors**
- **Pencil**
- **Markers or colored pencils**
- **Large envelope**

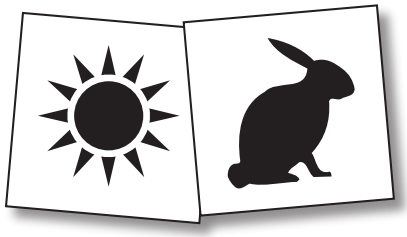
Time for the design team to start brainstorming!

Your team will **draw pictures of 20 'things'**. These 'things' can be absolutely anything! Here are a few suggestions, but try to use your imagination to come up with your own ideas.



Some possibilities are:

- **Types of food**
- **Music bands**
- **Types of flowers**
- **Types of candy**



Once you have chosen your topic, start thinking about what to draw! Cut your blank pieces of paper into smaller squares. Make sure that each square is the same size. Using pencils and markers, you are ready to start drawing. A bit of advice… start with a pencil in case you want to erase something!

Each team member should draw on at least FIVE squares. Once the drawings are complete, put all of the squares into the large envelope.

How are you going to tell others about how to play your game? **Through an instruction page.** Remember to include all of these instructions on the instruction page. Players will work in teams. They will look at your drawings (all 20 of them). Then they will classify them however they want to, but they will need to explain their choice.

NAME: _____

Student Worksheet

Activity Two

BREAKING NEWS!

You have just been hired to be part of a writing team for a large country-wide newspaper. With a partner, you will form the new BREAKING NEWS report team. This week's Breaking News is:

"We have Classified the _____ (Animal of your Choice)!"

Together as a team, you will research an animal of your choice. Focus your research on this animal. Your team should find enough information so that you can write a **one-page article for the newspaper**. The main point of your story should be that you were finally able to formally classify this animal. It's breaking news! Everyone in the country is going to be reading your article!

In your newspaper article, you should include the following information:

- **Basic information about the animal**
(physical description, habitat, etc.)
- **What Formal Classification is**
(describe the different levels: kingdom, phylum, class, family, genus, species)
- **Your animal's formal classification**
- **What it means for the world to have finally discovered this**
(use your imagination!)

Before beginning your research, spend some time with your team looking at a sample newspaper. Read a few articles that interest you.

While reading, think of the following things:

- What is a good catchy title?
- How is the topic introduced?
- Are pictures or any visuals used in addition to the writing?

This activity is heavily based on your own creativity:

- How can you make your article very interesting to read?
- How can you use pictures to keep the reader's attention?

NAME: _____

Student Worksheet

Activity Three

IT'S DRAMA TIME!

**In this activity, you will put on a drama production.
You will work with one other person.
You will put on a TWO-PERSON PLAY about
warm-blooded and cold-blooded animals.**

Before you begin writing your play, you need to do some planning and brainstorming. One person will be a cold-blooded animal; the other person will be a warm-blooded animal. **Which animals are you going to choose?** It's up to you! Pick an animal you would like to learn more about… Don't forget, you need to pick **ONE cold-blooded animal** and **ONE warm-blooded animal**.

Once you have chosen your animal, it's time to start your research! You will need to learn a bit more about your animal so that you can write the dialogue of your play. Use research tools like the internet and books to find out about your animal. Look for answers to the following questions:

- **What does my animal look like (You will be dressing up as your animal!)**
- **What makes it either cold-blooded or warm-blooded?**
- **What is your animal's habitat?**
- **Does it have any physical adaptations that help it survive in its habitat?**

It's time to start writing your play!

With your partner, start writing a conversation between you. Remember, you are acting out animals! You should have at least TWO pages of dialogue. Once you have written your play, you are ready to start thinking about your costumes. How creative can you be?

Your play should teach the audience what the difference between cold-blooded and warm-blooded animals is, using your animals as examples.

Have fun putting on your play, and have fun watching your classmates' plays as well!

NAME: _____

Student Worksheet

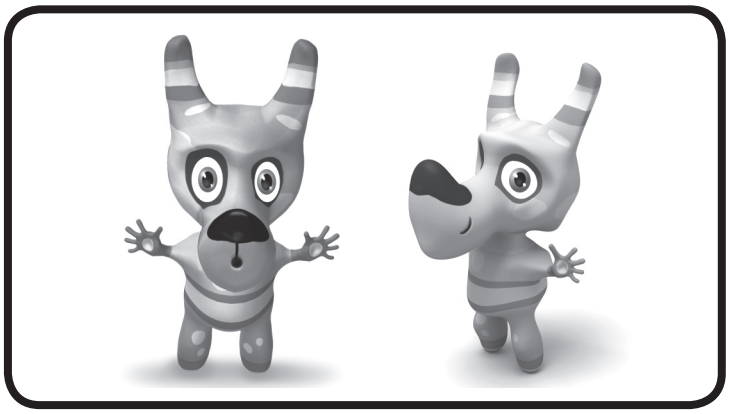
Activity Four

PLASTICINE VERTEBRATES AND INVERTEBRATES!

WHAT is the difference between a VERTEBRATE and an INVERTEBRATE?

Let's explain the difference using PLASTICINE!

Below is a picture of some figurines that someone has made using Plasticine.
Are these figurines vertebrates or invertebrates?
Let's make our own!



You can either work with a partner or on your own. Before beginning to sculpt your Plasticine, you will need to **brainstorm**. If you work with a partner, you will need to create a group of twelve animals (six per person). If you work on your own, you will need to create six animals.

Whether you work on your own or with a partner, make an equal number of vertebrates and invertebrates. If you're working with a partner, this means that SIX of the animals have to be vertebrates and SIX have to be invertebrates. If you're working on your own, THREE of the animals have to be vertebrates and THREE have to be invertebrates. If you need help, you can look back to your reading passage for examples. You can also use books or the internet for help. Make a list of your animals.

You are ready to start sculpting!

When you are done sculpting your animals, walk around the classroom and look at other groups' sculptures. Try guessing what animals they have sculpted.

Can you classify other groups' animals into the two groups: vertebrates and invertebrates?

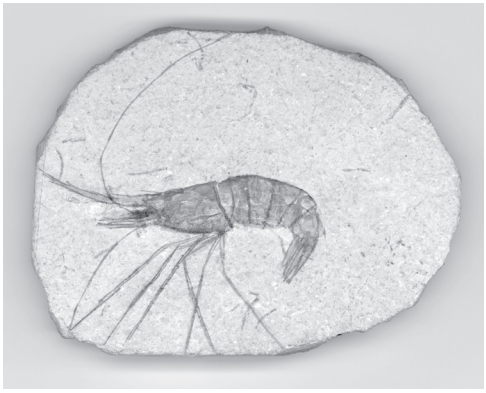
Ask others to try classifying the animals you have sculpted.

NAME: _____

Student Worksheet

Activity Five

CREATE YOUR OWN FOSSIL IMPRESSION!



FOSSILS are the remains of animals or plants that are preserved from a long time ago. You have probably seen a fossil before, but not realized what it was!

Here is a picture of a **fossil** found on a rock. This fossil is very obvious. It is easy to see. It isn't always so noticeable though! Sometimes it might just be a faint line or a bump. This could just be part of the rock. Or it could be a real fossil!

In this activity, you are going to **create your own fossil impression** using a paper rubbing technique.

Walk around the classroom and find TEN small objects that you find interesting. Try to find something that you can imagine as a fossil. Look for something that has a lot of texture on it – bumps, indents, lines, etc. The more texture, the better your fossil impression will look! You can also look at home for things that you would like to make a fossil impression of. Here are just a few suggestions:

- **A leaf**
- **A small rock or stone**
- **A coin**
- **A piece of food (for example, an almond has bumpy skin)**
- **The carpet**
- **Door handle**
- **And so on...**

Once you have made a list of your **ten objects**, you are ready to start making your fossil impression. **You will need:**

- **Blank piece of paper**
- **Pencil**

Start making your impression by placing the piece of paper over your object. Use the side edge of the pencil lead (ask your teacher to demonstrate) to start 'rubbing'. The texture of the object underneath the paper should start to appear. Don't press too hard with the tip of your pencil!

NAME: _____

Student Worksheet

Activity Six

ILLUSTRATE A PERFECTLY ADAPTED ANIMAL!

You have been hired to invent a **perfectly adapted animal** for life on Earth! This animal does not need to look like anything that lives on Earth right now.

Rather, it should not look like any animal you've ever seen!

Let's remind ourselves what a **physical adaptation** is. It is a physical feature that has been changed for survival purposes. Now try to think of this… Can you invent an animal that you believe has all the perfect physical adaptations for it to survive here on Earth? We know that humans survive well and that our bodies have many functions to make life easy.

Can you stretch your imagination even further? Can you invent an animal that has even more adaptations than a human? That has perfect physical adaptations?

YES YOU CAN!

In this activity, you will draw out this perfectly adapted animal. On a blank piece of paper, start your brainstorming with sketches. Once you have sketched out your animal, you are ready to transfer it to a new blank piece of paper. Use colored pencils to add color to your animal.

Hopefully it will be obvious how **different** your animal is from any animal you have ever seen. You will still need to label **ALL** parts of your drawing. Use arrows and lines to point out each physical adaptation that you have invented for your animal.

By the end of this activity, your class should be able to put together quite an INTERESTING group of animals…

Can you imagine a ZOO full of your animal inventions?

Can you think of a name for your class' ZOO? Have fun being creative; let your imagination be free!

NAME: _____

Student Worksheet

Activity One

DESIGN NEW TRIVIAL PURSUIT CARDS!

You have probably played the game "Trivial Pursuit" before.
It's a game that has knowledge-based QUESTIONS on cards.
Teams ask each other questions that are on the cards.
If your answer is correct, you move your game piece ahead on the board.

Now it's time to create your own cards…

Using information you have learned about cells, come up with **TWO** new cards. Each card has FOUR questions on it. This means you will come up with eight questions and eight answers in total.

Use the front and back card format below as a guideline for setting up your questions and answers!

FRONT

SCIENCE	_____ (Question)
SCIENCE	_____ (Question)
SCIENCE	_____ (Question)
SCIENCE	_____ (Question)

BACK

SCIENCE	_____ (Answer)
SCIENCE	_____ (Answer)
SCIENCE	_____ (Answer)
SCIENCE	_____ (Answer)

NAME: _____

Student Worksheet

Activity Two

ORGANIZE A DNA CONFERENCE!

YOU have been chosen to be the STUDENT LEADER on the organizing committee of a conference. The conference will teach people what DNA is and how it works. As a student leader, you have a very important job to do. You need to figure out what information needs to be PRESENTED to people at the conference.

Use the steps below to carefully plan out this conference. The purpose of this activity is not to collect new information on DNA. The purpose is to use information you **already know** about DNA. Think about how you could present this information to a large audience.

Copy the following form into your notebook. Fill in the spaces with your own ideas and plans! Have fun with it – money or time is not a concern. You can create your dream conference!

Title of my conference: _____

Date of conference: _____

Who will come to my conference: _____

How many people will attend: _____

Topics to discuss: _____

_____

_____

Any other ideas: _____

Pictures of what I think the conference will look like:

NAME: _____

Student Worksheet

Activity Three

Local Newspaper Article:
"THERE HAS BEEN AN AMOEBA SIGHTING IN TOWN!"

You have just been hired to be part of a writing team for your local newspaper. In groups of THREE, you will form the new LOCAL NEWS TEAM. This week's report is: "There has been an Amoeba Sighting in Town!"

Together as a team, you will research the **amoeba**. Focus your research on this single-celled organism. Remember, an **amoeba** is a single-celled organism that lives in the ocean, in fresh water, in soil, and even inside the bodies of large animals! Your team should find enough information so that you can write a one-page article for the newspaper.

IN YOUR NEWSPAPER ARTICLE, you should include the following information:

- **Basic information about the amoeba**
- **WHAT the amoeba looks like**
- **HOW it is different from multicellular organisms**
- **WHERE in town it was spotted!!! (Be creative!)**

BEFORE BEGINNING YOUR RESEARCH, spend some time with your team looking at a sample newspaper. Read a few articles that interest you. While reading, think of the following things:

- What makes a good catchy title?
- How is the topic introduced?
- Is it introduced in the first paragraph?
- Are pictures or any other visuals used in addition to the writing?

This activity is heavily based on your own creativity. Be sure to answer the following questions before you write your article:

- How can you make your article very interesting to read?
- How can you use pictures to keep the reader's attention?

NAME: _____

Student Worksheet

Activity Four

BUILD A CELL MOBILE!

FOR THIS ACTIVITY, you will need the following materials:

- pipe cleaners (different colors, as many as you need)
- string
- scissors
- coat hanger

You will build your own 3-dimensional cell mobile to hang up in your classroom.

WHAT IS A MOBILE?

It is a hanging sculpture or decoration whose parts are balanced and hanging in the air.

In this activity, you will be constructing **four cells** out of pipe cleaners. These four 3-dimensional cells will be attached to your coat hanger to form your mobile. Before you start constructing however, you will need to think about what your cells are going to look like. Remember, these cells will be 3-dimensional. Therefore, they can not lie flat on a table. They will be round like a soccer ball!

IN YOUR CELLS, you should use pipe cleaners to show the following parts of the cell:

• cell membrane • nucleus • cytoplasm

STEPS:

1. Collect all of your materials.
2. Sketch out what you want your cells to look like.
3. Think about how you can construct with pipe cleaners.
4. You are ready to begin building!
5. Build the **cell membrane**. (Remember, it is round like a soccer ball! You will need to piece pipe cleaners together.)
6. Build the **nucleus**.
7. Build the **cytoplasm**.
8. Connect the three structures so that they join as one object.
9. Once you have completed your first cell, you are ready to continue building your three other cells.
10. Cut four pieces of string (each one of a different length). Attach a string to each cell you have built.
11. Attach your cells to the coat hanger and hang it up in your classroom.

NAME: _____

Student Worksheet

Activity Five

WRITE A CELL SPECIALIZATION RESUME!

To be SPECIALIZED in something means to have a very unique and specific function. For example, look at your teacher. He or she is specialized because they have a specific job to do... to teach you! Cells are specialized too. They each have a specific function which is needed to support the life of the organism of which they are a part.

In this activity, you will write a resume, pretending to be a cell.

WHAT IS A RESUME?

A resume is a **one-page report** that outlines information about you: some basic personal information, your education background, your work background and your personal interests. When you apply for a job, you present your resume to others to give them an impression of your strengths and experiences.

Copy the following resume format in your notebook, filling in the spaces with your own knowledge and ideas about a particular cell's specialization. Have fun!

RESUME

I am a _____ cell (plant or animal)

Personal Information:

Name: _____

Size: _____ Age: _____

What I look like: _____

What my function is: _____

Personal interests: _____

Pictures of what I look like:

NAME: _____

Student Worksheet

Activity Six

IT'S SHOW TIME! A PLAY ABOUT DIFFUSION AND OSMOSIS

For this activity, you will divide into drama groups of SIX to EIGHT people.

It's show time!

We have learned how particles move back and forth through a cell membrane. In particular, we learned about **diffusion** and **osmosis**.

NOTE THESE DEFINITIONS:

DIFFUSION is the movement of particles from an area of many particles to an area of fewer particles.

OSMOSIS is a special type of diffusion. In osmosis, small particles are able to pass through the cell membrane. Others are too large to pass through the membrane. Since only some particles can move through the cell membrane, it is called a **semi-permeable** membrane.

NOW IT'S TIME TO START PLANNING YOUR PLAY!
Follow the steps below.

1. Divide your group members into different roles:
   - Some of you will be **particles**.
   - Some of you will be the **cell membrane**.
   - Some of you will be **water**.
   - One person might also be the **narrator**.

2. Now you are ready to start writing your play. Make sure that everyone in the play has **at least ONE line** to remember in the performance. The purpose of this play is to explain the following terms:
   - **diffusion**
   - **osmosis**
   - **semi-permeable membrane**

3. Before practicing your performance, write down the play on paper. Use your reading passages for information to explain the scientific terms. Remember, in an activity like this, you will need to expand your imagination quite a bit!

Any humor will make the play more enjoyable to watch! Pretend you were in the audience… what kind of play would you like to watch?

NAME: _____

Student Worksheet

Activity One

Global Warming Survey

Now that you know more about what causes global warming, find out what your friends and family know. You can do this by doing a survey.

1. First, write a list of questions that will let you find out what types of information people already know about global warming, what misconceptions people might have about global warming, and where people need to learn more. Begin with questions that introduce the topic, and move to more specific questions later in the survey. Some questions you might consider asking include:

- Have you ever heard of the term "global warming?"
- What is global warming?
- How long has global warming been going on?
- What causes global warming?
- What role do humans play in global warming?
- What are greenhouse gases?

Be sure to add more of your own questions.

2. Conduct your survey. You may choose to ask people the questions and audiotape their responses, or photocopy your survey questions and ask people to write their answers. Be sure to leave enough space for people to respond. Give your survey to 10–12 people.

3. Analyze the results of your survey. Read or listen back to all of the responses. What information do people already know about global warming? Do people have any incorrect information, or misconceptions, about global warming? Are there areas where people do not have any information at all? Do you see any other patterns or trends in people's responses? Summarize your results into a chart like the one below:

people already know about…	people have misconceptions about…	people have little or no information about…

4. Design a brochure that addresses people's misconceptions about global warming, and that gives people more information about the causes of global warming. Give your brochure to everyone who took your survey.

NAME: _____

Student Worksheet

Activity Two

CFC Audit

You learned that CFCs were banned in the 1980s because of the problems they cause in the Earth's atmosphere. An audit is a check-up. By doing a CFC audit at your home and school, you can find out if any of these synthetic greenhouse gases are still in use.

1.

Write a list of things that might contain CFCs. Remember that CFCs were used in refrigeration (this includes air conditioning), cleansers, and aerosol cans. Brainstorm a list of any items at your home or school that might contain CFCs. Organize your list by room.

2.

Conduct your audit. Go room to room and check on your list to see if you find any of the items. When you find an item that might contain CFCs, write down the name of the item, a description of the item, the year it was made, a model number, and the manufacturer. Most of this information can be found on a label somewhere on the item. Look on the label for any information about CFCs. Write down if the label says the item DOES or DOES NOT contain CFCs. If you do not find information about CFCs on the label, leave a question mark on your audit.

3.

Use the internet or library resources to find out more about the items on your audit with a question mark. Look up the manufacturers' websites on the internet, or try to find a phone number for the manufacturer in a phone book. Contact the manufacturer if necessary to find out whether the item in question contains CFCs. If it is an old item, such as an old air conditioner, find out whether the manufacturer makes new models without CFCs.

4.

Use all of the information you gathered to write a report that details where CFCs can still be found in your home or school. Write an action plan that contains solutions for cutting out the use of CFCs. Your class might even choose to raise money to replace older CFC-containing items with newer ones that do not contain CFCs. Ask your teacher or parents' group to help.

NAME: _____

Activity Three

Create a Pie Chart

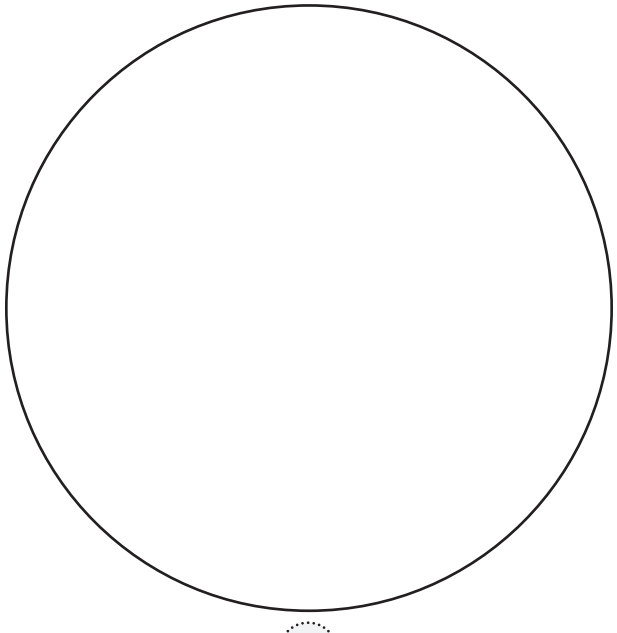
A pie chart can help you visualize the parts of a whole.

Create a pie chart for all of the gases in the atmosphere. Remember that nitrogen makes up 78% of the atmosphere, and oxygen makes up 21%. That leaves 1% for all the other gases, which you can label "other."

To divide the sections of the pie chart, remember that a complete circle contains 360 degrees (°). Since the total gases in the atmosphere add up to 100%, divide 360/100 to find out the number of degrees that represent 1%. Now, multiply the % of each gas to find the number of degrees for that section of gas. For example, if 1% takes up *a* degrees, than the section for nitrogen should be 78 X *a*. Fill in the number of degrees for each section in the chart below. You can check your work by adding the number of degrees for all three sections (it should add up to 360).

gas	percentage	degrees
nitrogen	78%	
oxygen	21%	

Using a ruler, draw a radius line on the circle below, or draw a circle in your science notebook using a compass. Then use a protractor to mark out the number of degrees from the radius line you drew to the first section. Continue until you have all three sections marked.



NAME: _____

Student Worksheet

Activity Four

Greenhouse gases are on the rise!
Television News Report

Imagine that you are a news reporter for your local TV news channel. In groups of three or four, you will create a news report on the rising amounts of greenhouse gases in the atmosphere.

BEFORE YOU BEGIN

Do you regularly watch the news? If not, spend some time in the evening watching different news programs. Think about how the news reporters are presenting their stories. What tone of voice do they use? What kinds of information to they present? How do they use visuals to help viewers understand the story?

DO YOUR RESEARCH

Using up-to-date references, collect information about the rise in the amount of carbon dioxide, methane, and nitrous oxide in the atmosphere. Find out how scientists measure the concentration of these gases in the atmosphere, how many years scientists have data for these gases, and how the concentration of the gases in the atmosphere have changed since scientists have been measuring.

WRITE YOUR NEWS REPORT

Based on your research, put together a 5–10 minute news report. Be sure to include the following in your report:

- An introduction, which gives an overview of the information you will present, including the link between greenhouse gases and global warming
- how scientists measure the concentration of gases in the atmosphere
- how the concentration of gases has changed
- what is causing the change in the concentration of greenhouse gases
- A summary, which explains what might be done to address the problem

PRESENT YOUR REPORT

If you have access to a video camera, film your news report. Then, show the film in class. If you do not have a video camera, set up a table in your classroom and give your presentation live. Be sure to practice a few times first!

NAME: _____

Student Worksheet

Activity Five

Greenhouse Gas Concept Web

Create a detailed concept web to organize the information you learned about greenhouse gases. Begin your concept web with the main topic, "Greenhouse gases," and include links to each of the gases you learned about in this book:

water vapor

carbon dioxide

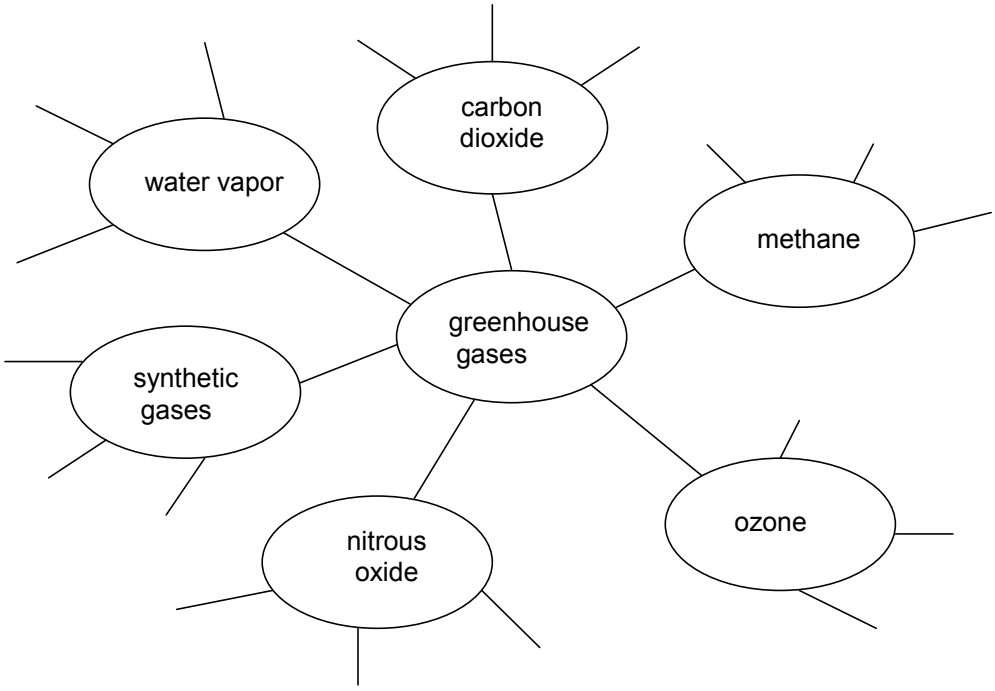
methane

ozone

nitrous oxide

synthetic gases

Construct your map on a large piece of poster paper so that you have plenty of room to include all of the main concepts about each of the greenhouse gases. You may use your main topic as a central concept, as shown below, or as a top-level concept if you would like to do a pyramid-style map.



Add links to each of the greenhouse gases to include information about its main sources, its ability to absorb heat energy, its residence time in the atmosphere, and whether it is part of a natural biogeochemical cycle.

NAME: _____

Student Worksheet

Activity Six

Create a Brochure

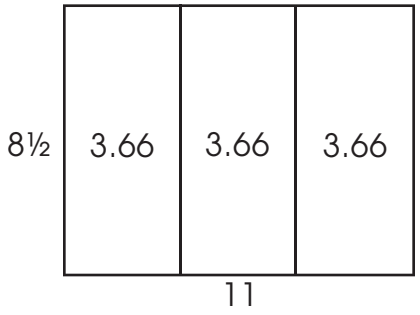
A brochure is a handy way to get information to people. You can create a brochure showing the sources of the major greenhouse gases. People can use the information in your brochure to understand where greenhouse gases come from, and to make choices that can lead to fewer greenhouse gases in the atmosphere.

GET IDEAS

Start by looking through sample brochures to get ideas about how they are laid out, and how graphics and text are used to present main ideas in a small space. Organizations such as banks, waste management companies, state parks, and water districts often put out brochures to help give people information. Ask your teacher or librarian for help finding a selection of brochures to study.

LAY OUT YOUR BROCHURE

Usually, brochures are made by folding an 8½ x 11 in. paper into thirds.



Decide where you are going to put the information about each type of greenhouse gas. Be sure to include:

- the main sources of carbon dioxide, methane, ozone, nitrous oxide, and synthetic gases
- the effects of greenhouse gases in the atmosphere
- a few ideas for ways people can lessen their output of greenhouse gases
- graphics on each of the panels of the brochure

DISTRIBUTE YOUR BROCHURE

Ask your teacher for help making double-sided copies of your brochure. Fold the brochures and give them to your family and friends. You may want to share your brochures with other classrooms at your school.

NAME: _____

Student Worksheet

Activity One

Ecosystem Slideshow

You learned that ecosystems are being affected by global warming. Natural habitats may be affected by rising sea levels, warming temperatures, drought, severe storms, spreading disease, or migrating animals.

1. Make a list of 4–5 ecosystems that you would like to present.

2. For each ecosystem, use library or internet resources to learn more about how global warming is affecting its habitats. Also look for photographs of the ecosystems that show the effects of global warming.

3. Using a slide show computer program, create a slide for each ecosystem. Each slide should contain the following:

- A title (usually the name of the ecosystem)
- 3–5 bullet points summarizing how the ecosystem is affected by global warming
- A photograph or visual image representing the effects of global warming in the ecosystem

The slideshow should also contain:

- An opening slide, with an introduction that draws people in and tells them why it is important to learn more about the effects of global warming on ecosystems.
- A closing slide, with a summary.

4. Be sure that each slide is clear and easy to read. Write a short script for yourself, so that you will know what to say for each slide during the slideshow presentation.

5. Give the slideshow presentation for your class. At the end, ask if anyone has questions.

Ask your teacher for help and permission to post your slideshow on your class website.

NAME: _____

Student Worksheet

Activity Two

Write a Global Warming Action Plan

Working with a small group, imagine that you work for government agencies. Members of your group can represent different agencies, such as Health, Infrastructure, Human Services, Employment, and Disaster Management. It is your job to work together to help plan for the effects of global warming in your region.

First, research how global warming is likely to affect your area. Find out about:

- how the weather may change as global temperatures rise
- what severe weather conditions your area might experience
- whether your region will be affected by sea level rise
- which diseases may spread to your area as a result of warming

Then, think about what special needs the people in your area will have due to the effects of global warming. How will local services such as health care, transportation, infrastructure, and social services need to change in order to meet people's needs?

Next, write a plan of action. Think about what will need to be done in your area to help people live with the effects of global warming. Have each member of your group write 6–10 bullet points describing steps their agency will take to prepare for meeting the challenges of global warming.

Finally, call a "town hall meeting." Present your action plan to the class. Your classmates can play the part of concerned citizens. Prepare notes to help you talk about your bulleted list of action steps. Members of your group should take turns presenting and discussing each step. Use visual aids such as overhead slides or posters.

After your presentation, invite your classmates to offer their responses to your plan. Ask for constructive criticism and ideas for planning.

NAME: _____

Student Worksheet

Activity Three

A Photographic Story

Scientists have been using satellites to photograph Earth from space for many years. Use satellite photos to tell a story of how Earth's ice caps change over time.

First, search for satellite photos showing Earth's ice caps. Some websites you might find helpful include:

- http://visibleearth.nasa.gov/
- http://earthobservatory.nasa.gov
- http://www.glaciers.er.usgs.gov/gl_slide/

Look for a set of photographs that tell a story about polar ice. You may choose from the themes listed below, or create your own story:

- How the ice in an area changes from winter to summer
- How the ice cover in the Arctic differs from the ice cover in the Antarctic
- How Arctic ice cover has changed over a period of years
- How Antarctic ice cover has changed over a period of years
- How large icebergs break off of ice sheets and travel in the ocean

Choose 8–10 photos that tell your story. Ask your teacher to help you print the pictures you choose. Paste the pictures onto heavy paper and bind or staple the pages together to form a book. For each picture, add a few sentences that describes the photograph and helps tell the story.

Read your story to other students. Bring your book home to share with your family and friends.

NAME: _____

Student Worksheet

Activity Four

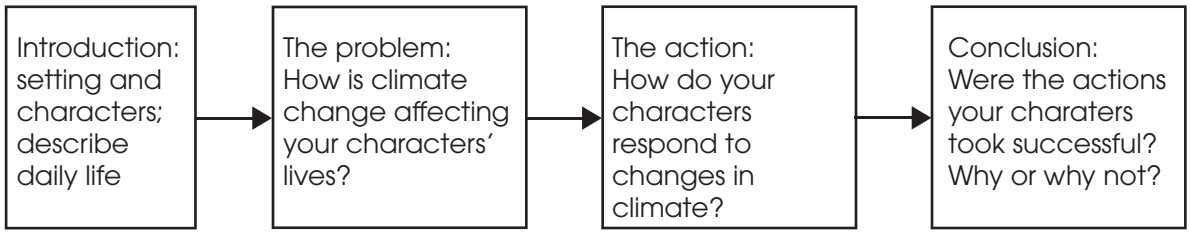
Write a story about early humans

You learned about how early humans were affected by changing climate. They often had to move to find new sources of food and fresh water. Their migrations around the world were affected by sea level and changes in yearly weather patterns.

Imagine what it would be like to live tens of thousands of years ago. Think about these questions:

- How do you get food? What do you eat? How is your food source dependent on climate?
- Where do you live? What is your shelter like? How do you protect yourself from the weather?
- What is a typical day like?
- Who do you live with?
- What changes would your community have to make if the climate became warmer or cooler?

Then, brainstorm a plot that relates to how the characters in your story respond to a change in climate. Organize your ideas using a concept map or flow chart like the one shown below.



Now, write your story. You may choose to use illustrations or maps to help you tell your story.

When you are finished writing the story, share it with your classmates and friends.

NAME: _____

Student Worksheet

Activity Five

Documentary: Scientists in Antarctica

Scientists brave extreme conditions to study the ice sheet in Antarctica. Learn more about how scientists live and work in Antarctica. Create a documentary based on your findings.

First, research how scientists live and work in Antarctica. You may find the following websites helpful:

- The International Polar Foundation http://www.sciencepoles.org
- The U.S. Antarctic Program http://www.usap.gov/
- Australian Antarctic Division http://www.aad.gov.au

While you are doing research, ask the following questions:

- How do scientists travel to Antarctica?
- Where do they live when they are there?
- How long do they stay?
- What must they bring with them in order to survive?
- What are the weather conditions like during their stay?
- How do they communicate with friends and family at home?
- What do they do for fun while they are there?

You may wish to try and contact a scientist who has been to Antarctica. Ask them for a phone or email interview. You may use some of the questions above, and add a few of your own.

Collect your research notes, photographs, and interviews. Use them to create a documentary about living and working in Antarctica. If you are not familiar with documentaries, watch a few on science television or check some out from your library. Pay attention to how words and graphics are used to tell a story.

Use a storyboard to organize your information into a 10–20 minute presentation. You will need to narrate your documentary. Write down your lines. Practice them a few times. Use a camera to record your documentary, or present it live for your class.

NAME: _____

Student Worksheet

Activity Six

Rising Sea Levels Cause Challenges Around the World!
Television News Report

Imagine that you are a news reporter for your local TV news channel. In groups of three or four, you will create a news report on how people are being impacted by rising sea levels.

BEFORE YOU BEGIN

Do you regularly watch the news? If not, spend some time in the evening watching different news programs. Think about how the news reporters are presenting their stories. What tone of voice do they use? What kinds of information do they present? How do they use visuals to help viewers understand the story?

DO YOUR RESEARCH

Rising sea levels are already causing problems for many cities and communities around the world. Island nations are being particularly affected right now. So are cities built at very low sea level. Rising seas are also causing damage to shoreline barriers, roads, homes, and natural habitats. Choose 3–4 examples of communities that are having problems with rising sea levels. These will be your focus for your news report. For each community you choose, find out what problems are being caused by rising seas, and how the community is handling those problems.

WRITE YOUR NEWS REPORT

Based on your research, put together a 5–10 minute news report. Be sure to include the following in your report:

- An introduction, which gives an overview of the information you will present
- WHERE your communities are located (you may wish to include a map with all locations marked)
- WHO lives in the affected communities
- WHEN rising seas became a problem for your communities
- HOW rising sea level is affecting each community
- WHAT the people in your communities are doing to address the problems of rising seas
- A summary, which explains why rising sea level is a problem around the world, and what might be done to address the problem

NAME: _____

Student Worksheet

Activity One

Biofuels Debate

People have different opinions about whether biofuels are a good alternative to replace the use of gasoline and other fossil fuels in vehicles. Arrange a debate between two groups of students. One group will argue that switching to available biofuels now is a good idea; another group will argue that biofuels have too many problems and that people should keep looking for better alternatives to gasoline.

1. First, research both positions. Using the internet or library resources, find out more about people's opinions about biofuels. Also be sure to find evidence to support either position. Ask yourself the following questions:

- Why do some people think that switching vehicles to biofuels right away is a good idea?
- How might a global switch to biofuels affect worldwide carbon emissions?
- How might the switch to biofuels affect other types of pollution?
- What are the other reasons, e.g., societal or economical, to switch to biofuels?
- Why do some people thing that switching to biofuels right away is *not* a good idea?
- How might a global switch to biofuels affect the production of food crops around the world? What effect could it have on food prices?
- What are the other reasons, e.g., societal, environmental, or economical, to keep looking for other alternative fuels besides biofuels?
- What are some other alternative fuels that might be better than biofuels?

2. Write notes for your arguments and talking points. Write short, bulleted descriptions of your main arguments, and evidence to support them. Also write descriptions of what you think the opposing side will argue, and your ideas and evidence to refute those arguments.

3. Conduct the debate. Flip a coin to see which team begins first. Each "turn" of the debate has three steps. The first team states one argument. Then, the second team has time to refute that argument. Finally, the first team has a chance to comment on what the opposing team said. Then, the second team takes their turn, beginning with an argument. The process continues until each team has had a chance to make all of their arguments. At the end, give the students in the class who are watching the debate a chance to comment on which team they thought won, and why.

NAME: _____

Student Worksheet

Activity Two

Alternative Fuel Fair

You learned about many types of alternative fuels that are being developed to run vehicles and power homes and businesses. In this activity, each student will choose one alternative fuel application to research in depth. Then., students will share what they learned in a poster fair.

1. Using the internet or library resources, skim through information about different alternative fuels and their applications. An application is the way a fuel is being used. For example, one application of solar cell technology is in roofing panels that provide energy for one home. Another application for solar cell technology might be to provide energy needed to produce hydrogen for use in fuel cells. For this project, choose just one application of one alternative technology. Choose one you think is cool or interesting!

2. Research your alternative fuel application. Using the internet, look up research groups that are developing the technology. Look for companies that might be producing the technology (if it is available in the market yet—it is okay to present technologies that are still in development). Try to find out information such as:

- What kinds of technology are being developed to use the alternative fuel in the application you are researching?
- How long have scientists been working on the technology?
- Is the technology available to buy yet, or is it still being developed? When will it become available?
- What are the everyday benefits to people of using this alternative fuel application?
- What are environmental, societal, or other benefits of this alternative fuel application?

3. Create a poster with visuals and short text describing your alternative fuel technology. Display posters from all the students in the class, and invite parents, teachers, and students from other classes to walk through your poster fair and ask questions.

NAME: _____

Student Worksheet

Activity Three

Plan A Carbon-Free Buisness

You read about the Masdar Initiative to Build a Carbon-Free City. Can you imagine a carbon-free buisiness?

1. **Choose your business.** What type of business would you like to run? Be imaginative, it could be anything! Any type of business can go "Green"—amusement parks, hair salons, mechanics, stores, anything!

2. **Research the ways that your business adds carbon emissions to the atmosphere.** Think about:

   - What are all the different ways that your business uses energy?
   - Where does the energy come from?
   - What alternative sources of energy might be available to your business? Which alternative fuels are best for each type of energy need?
   - How can your business reduce its overall need for energy?

3. **Write your plan to run your business without carbon emissions.** Describe your business in words, pictures, and diagrams. Be sure your business plan includes:

   - The type of business—the services and products you will offer.
   - The name and location of your business.
   - A description of the facilities, machines, vehicles, etc., that you will own.
   - A description of your everyday operations.
   - A complete list, with explanations, of all of the alternative sources of energy you will use in different parts of the business.
   - An explanation of the ways in which your business will reduce its overall need for energy.
   - A discussion of how your business compares to a similar kind of business that does NOT practice sustainability. How much energy and resources you're your business save? How much pollution does the other business make? How much less waste do you make? Are your operating costs different?

NAME: _____

Student Worksheet

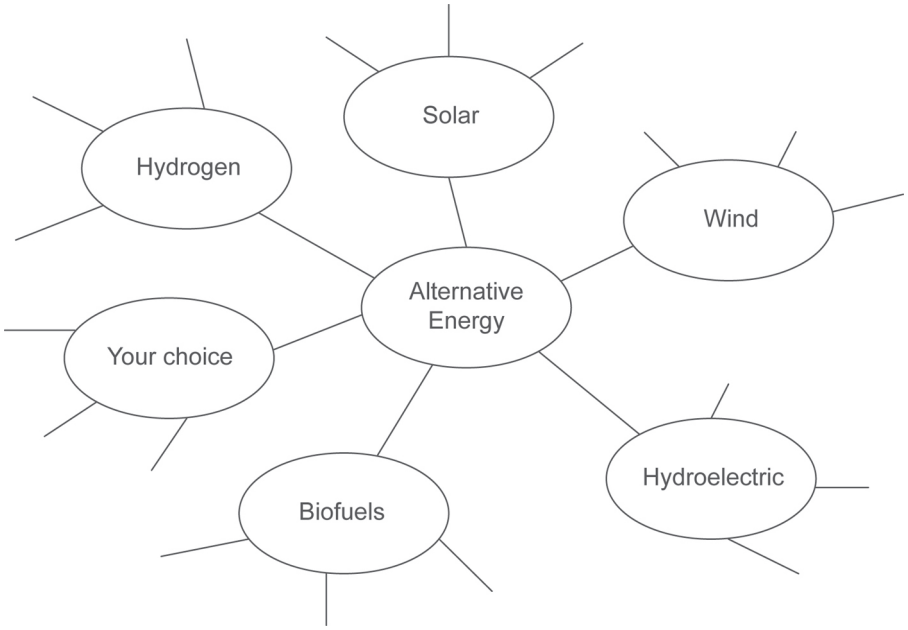
Activity Four

Greenhouse Gas Concept Web

Create a detailed concept web to organize the information you learned about alternative fuels.

Solar
Wind
Hydroelectric
Biofuels
Hydrogen
Add one additional alternative fuels that you would like to research, such as geothermal or tidal.

Construct your map on a large piece of poster paper so that you have plenty of room to include all of the main concepts about each of the alternative fuels. You may use your main topic as a central concept, as shown below, or as a top-level concept if you would like to do a pyramid-style map.



Add links to each of the alternative sources of energy to include information about how it is captured and turned into useful energy that can run vehicles or power homes and businesses.

NAME: _____

Student Worksheet

Activity Five

Create a Brochure

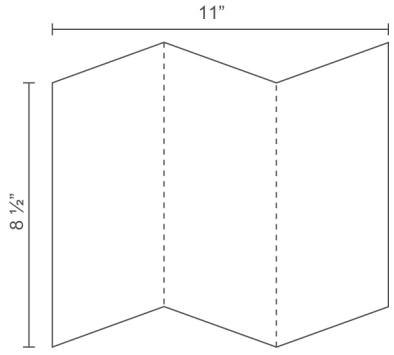
A brochure is a handy way to get information to people. You can create a brochure showing people ways to lower their greenhouse gas emissions.

GET IDEAS

Start by looking through sample brochures to get ideas about how they are laid out, and how graphics and text are used to present main ideas in a small space. Organizations such as banks, waste management companies, state parks, and water districts often put out brochures to help give people information. Ask your teacher or librarian for help finding a selection of brochures to study.

LAY OUT YOUR BROCHURE

Usually, brochures are made by folding an 8 ½ × 11 in. paper into thirds.



Decide where you are going to put the information about ways to lower your greenhouse gas emissions. Be sure to include:

- Suggestions for using public transportation
- Benefits of walking of riding a bicycle for short trips
- Information about how using electricity adds to greenhouse gas emissions
- Suggestions for reducing the use of electricity

DISTRIBUTE YOUR BROCHURE

Ask your teacher for help making double-sided copies of your brochure. Fold the brochures and give them to your family and friends. You may want to share your brochures with other classrooms at your school.

NAME: _____

Student Worksheet

Activity Six

Design Your Carbon-Free Home

Design a home that people can live in without adding greenhouse gases to the atmosphere.

First, research "Green Building" or "Green Architecture." Ask yourself:

- How will people get power to run electrical appliances without using electricity from power companies that burn fossil fuels?
- How can you use alternative energy sources for your home, such as solar and wind?
- What types new technologies and appliances use less energy?
- How can the design of the home help the home use less resources? What is the effect of the placement of windows, height of ceilings, use of insulation, different heating and cooling systems, choice of landscape plants?
- How does the local climate affect which designs and materials to choose?

Then, think about the type of home you would love to have. Do you want a lovely house in the country or a cool city apartment? Where do you want to live—in a place with a snowy winter, a dry desert, a moist tropical environment?

Next, design your home. Start by making a list that contains all of the materials and features of each system of the home:

- Foundation
- Framing
- Outside walls
- Roof
- Inside walls
- Flooring
- Heating and Cooling
- Plumbing
- Insulation
- Electrical & Energy Source
- Landscaping

You may want to look in the library for building plans to see how they are drawn, and what types of information they include. Have fun drawing and designing your home!

Display your drawings for the class, and make a presentation to tell your classmates about all of the Green features of your dream home!

Publication Listing

SOCIAL STUDIES - Books

ITEM #	TITLE
	DAILY LIFE SKILLS SERIES
CC5790	Daily Marketplace Skills Gr. 6-12
CC5791	Daily Social & Workplace Skills Gr. 6-12
CC5792	Daily Health & Hygiene Skills Gr. 6-12
CC5793	Daily Life Skills Big Book Gr. 6-12
	21ST CENTURY SKILLS SERIES
CC5794	Learning Problem Solving Gr. 3-8
CC5795	Learning Communication & Teamwork Gr. 3-8
CC5796	Learning Skills for Global Competency Gr. 3-8
CC5797	Learning to Learn Big Book Gr. 3-8
	MAPPING SKILLS SERIES
CC5786	Gr. PK-2 Mapping Skills with Google Earth
CC5787	Gr. 3-5 Mapping Skills with Google Earth
CC5788	Gr. 6-8 Mapping Skills with Google Earth
CC5789	Gr. PK-8 Mapping Skills with Google Earth Big Book
	NORTH AMERICAN GOVERNMENTS SERIES
CC5757	American Government Gr. 5-8
CC5758	Canadian Government Gr. 5-8
CC5759	Mexican Government Gr. 5-8
CC5760	Governments of North America Big Book Gr. 5-8
	WORLD GOVERNMENTS SERIES
CC5761	World Political Leaders Gr. 5-8
CC5762	World Electoral Processes Gr. 5-8
CC5763	Capitalism vs. Communism Gr. 5-8
CC5777	World Politics Big Book Gr. 5-8
	WORLD CONFLICT SERIES
CC5511	American Revolutionary War Gr. 5-8
CC5500	American Civil War Gr. 5-8
CC5512	American Wars Big Book Gr. 5-8
CC5501	World War I Gr. 5-8
CC5502	World War II Gr. 5-8
CC5503	World Wars I & II Big Book Gr. 5-8
CC5505	Korean War Gr. 5-8
CC5506	Vietnam War Gr. 5-8
CC5507	Korean & Vietnam Wars Big Book Gr. 5-8
CC5508	Persian Gulf War (1990-1991) Gr. 5-8
CC5509	Iraq War (2003-2010) Gr. 5-8
CC5510	Gulf Wars Big Book Gr. 5-8
	WORLD CONTINENTS SERIES
CC5750	North America Gr. 5-8
CC5751	South America Gr. 5-8
CC5768	The Americas Big Book Gr. 5-8
CC5752	Europe Gr. 5-8
CC5753	Africa Gr. 5-8
CC5754	Asia Gr. 5-8
CC5755	Australia Gr. 5-8
CC5756	Antarctica Gr. 5-8
	WORLD CONNECTIONS SERIES
CC5782	Culture, Society & Globalization Gr. 5-8
CC5783	Economy & Globalization Gr. 5-8
CC5784	Technology & Globalization Gr. 5-8
CC5785	Globalization Big Book Gr. 5-8

SOCIAL STUDIES - Software

ITEM #	TITLE
	MAPPING SKILLS SERIES
CC7770	Gr. PK-2 Mapping Skills with Google Earth
CC7771	Gr. 3-5 Mapping Skills with Google Earth
CC7772	Gr. 6-8 Mapping Skills with Google Earth
CC7773	Gr. PK-8 Mapping Skills with Google Earth Big Box

SCIENCE - Software

	SPACE AND BEYOND SERIES
CC7557	Solar System Gr. 5-8
CC7558	Galaxies & the Universe Gr. 5-8
CC7559	Travel & Technology Gr. 5-8
CC7560	Space Big Box Gr. 5-8
	HUMAN BODY SERIES
CC7549	Cells, Skeletal & Muscular Systems Gr. 5-8
CC7550	Senses, Nervous & Respiratory Systems Gr. 5-8
CC7551	Circulatory, Digestive & Reproductive Systems Gr. 5-8
CC7552	Human Body Big Box Gr. 5-8
	FORCE, MOTION & SIMPLE MACHINES SERIES
CC7553	Force Gr. 3-8
CC7554	Motion Gr. 3-8
CC7555	Simple Machines Gr. 3-8
CC7556	Force, Motion & Simple Machines Big Box Gr. 3-8

ENVIRONMENTAL STUDIES - Software

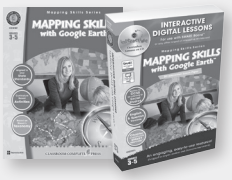
	CLIMATE CHANGE SERIES
CC7747	Global Warming: Causes Gr. 3-8
CC7748	Global Warming: Effects Gr. 3-8
CC7749	Global Warming: Reduction Gr. 3-8
CC7750	Global Warming Big Box Gr. 3-8

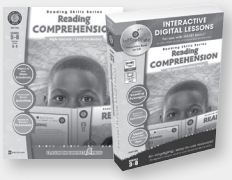
LANGUAGE ARTS - Software

CC7112	Word Families - Short Vowels Gr. PK-2
CC7113	Word Families - Long Vowels Gr. PK-2
CC7114	Word Families - Vowels Big Box Gr. PK-2
CC7100	High Frequency Sight Words Gr. PK-2
CC7101	High Frequency Picture Words Gr. PK-2
CC7102	Sight & Picture Words Big Box Gr. PK-2
CC7104	How to Write a Paragraph Gr. 3-8
CC7105	How to Write a Book Report Gr. 3-8
CC7106	How to Write an Essay Gr. 3-8
CC7107	Master Writing Big Box Gr. 3-8
CC7108	Reading Comprehension Gr. 5-8
CC7109	Literary Devices Gr. 5-8
CC7110	Critical Thinking Gr. 5-8
CC7111	Master Reading Big Box Gr. 5-8

MATHEMATICS - Software

	PRINCIPLES & STANDARDS OF MATH SERIES
CC7315	Gr. PK-2 Five Strands of Math Big Box
CC7316	Gr. 3-5 Five Strands of Math Big Box
CC7317	Gr. 6-8 Five Strands of Math Big Box





SCIENCE - Books

ITEM #	TITLE
	HANDS-ON STEAM SCIENCE SERIES
CC4100	Physical Science Gr. 1-5
CC4101	Life Science Gr. 1-5
CC4102	Earth & Space Science Gr. 1-5
CC4103	Hands-On Science Big Book Gr. 1-5
	ECOLOGY & THE ENVIRONMENT SERIES
CC4500	Ecosystems Gr. 5-8
CC4501	Classification & Adaptation Gr. 5-8
CC4502	Cells Gr. 5-8
CC4503	Ecology & The Environment Big Book Gr. 5-8
	MATTER & ENERGY SERIES
CC4504	Properties of Matter Gr. 5-8
CC4505	Atoms, Molecules & Elements Gr. 5-8
CC4506	Energy Gr. 5-8
CC4507	The Nature of Matter Big Book Gr. 5-8
	FORCE & MOTION SERIES
CC4508	Force Gr. 5-8
CC4509	Motion Gr. 5-8
CC4510	Simple Machines Gr. 5-8
CC4511	Force, Motion & Simple Machines Big Book Gr. 5-8
	SPACE & BEYOND SERIES
CC4512	Solar System Gr. 5-8
CC4513	Galaxies & The Universe Gr. 5-8
CC4514	Travel & Technology Gr. 5-8
CC4515	Space Big Book Gr. 5-8
	HUMAN BODY SERIES
CC4516	Cells, Skeletal & Muscular Systems Gr. 5-8
CC4517	Senses, Nervous & Respiratory Systems Gr. 5-8
CC4518	Circulatory, Digestive & Reproductive Systems Gr. 5-8
CC4519	Human Body Big Book Gr. 5-8

ENVIRONMENTAL STUDIES - Books

	MANAGING OUR WASTE SERIES
CC5764	Waste: At the Source Gr. 5-8
CC5765	Prevention, Recycling & Conservation Gr. 5-8
CC5766	Waste: The Global View Gr. 5-8
CC5767	Waste Management Big Book Gr. 5-8
	CLIMATE CHANGE SERIES
CC5769	Global Warming: Causes Gr. 5-8
CC5770	Global Warming: Effects Gr. 5-8
CC5771	Global Warming: Reduction Gr. 5-8
CC5772	Global Warming Big Book Gr. 5-8
	GLOBAL WATER SERIES
CC5773	Conservation: Fresh Water Resources Gr. 5-8
CC5774	Conservation: Ocean Water Resources Gr. 5-8
CC5775	Conservation: Waterway Habitat Resources Gr. 5-8
CC5776	Water Conservation Big Book Gr. 5-8
	CARBON FOOTPRINT SERIES
CC5778	Reducing Your Own Carbon Footprint Gr. 5-8
CC5779	Reducing Your School's Carbon Footprint Gr. 5-8
CC5780	Reducing Your Community's Carbon Footprint Gr. 5-8
CC5781	Carbon Footprint Big Book Gr. 5-8

LITERATURE KITS™ - Novel Study Guides

ITEM #	TITLE
	GRADES 1-2
CC2100	Curious George (H. A. Rey)
CC2101	Paper Bag Princess (Robert N. Munsch)
CC2102	Stone Soup (Marcia Brown)
CC2103	The Very Hungry Caterpillar (Eric Carle)
CC2104	Where the Wild Things Are (Maurice Sendak)
CC2105	The One in the Middle is the Green Kangaroo (Judy Bloom)
	GRADES 3-4
CC2300	Babe: The Gallant Pig (Dick King-Smith)
CC2301	Because of Winn-Dixie (Kate DiCamillo)
CC2302	The Tale of Despereaux (Kate DiCamillo)
CC2303	James and the Giant Peach (Roald Dahl)
CC2304	Ramona Quimby, Age 8 (Beverly Cleary)
CC2305	The Mouse and the Motorcycle (Beverly Cleary)
CC2306	Charlotte's Web (E.B. White)
CC2307	Owls in the Family (Farley Mowat)
CC2308	Sarah, Plain and Tall (Patricia MacLachlan)
CC2309	Matilda (Roald Dahl)
CC2310	Charlie & The Chocolate Factory (Roald Dahl)
CC2311	Frindle (Andrew Clements)
CC2312	M.C. Higgins, the Great (Virginia Hamilton)
CC2313	The Family Under The Bridge (N.S. Carlson)
CC2314	The Hundred Penny Box (Sharon Mathis)
CC2315	Cricket in Times Square (George Selden)
CC2316	Fantastic Mr Fox (Roald Dahl)
CC2317	The Hundred Dresses (Eleanor Estes)
CC2318	The War with Grandpa (Robert Kimmel Smith)
CC2319	Chocolate Fever (Robert Kimmel Smith)
CC2320	The Chocolate Touch (Patrick Skene Catling)
CC2321	The BFG (Roald Dahl)
	GRADES 5-6
CC2500	Black Beauty (Anna Sewell)
CC2501	Bridge to Terabithia (Katherine Paterson)
CC2502	Bud, Not Buddy (Christopher Paul Curtis)
CC2503	The Egypt Game (Zilpha Keatley Snyder)
CC2504	The Great Gilly Hopkins (Katherine Paterson)
CC2505	Holes (Louis Sachar)
CC2506	Number the Stars (Lois Lowry)
CC2507	The Sign of the Beaver (E.G. Speare)
CC2508	The Whipping Boy (Sid Fleischman)
CC2509	Island of the Blue Dolphins (Scott O'Dell)
CC2510	Underground to Canada (Barbara Smucker)
CC2511	Loser (Jerry Spinelli)
CC2512	The Higher Power of Lucky (Susan Patron)
CC2513	Kira-Kira (Cynthia Kadohata)
CC2514	Dear Mr. Henshaw (Beverly Cleary)
CC2515	The Summer of the Swans (Betsy Byars)
CC2516	Shiloh (Phyllis Reynolds Naylor)
CC2517	A Single Shard (Linda Sue Park)
CC2518	Hoot (Carl Hiaasen)
CC2519	Hatchet (Gary Paulsen)
CC2520	The Giver (Lois Lowry)
CC2521	The Graveyard Book (Neil Gaiman)
CC2522	The View From Saturday (E.L. Konigsburg)
CC2523	Hattie Big Sky (Kirby Larson)
CC2524	When You Reach Me (Rebecca Stead)
CC2525	Criss Cross (Lynne Rae Perkins)
CC2526	A Year Down Yonder (Richard Peck)
CC2527	Maniac Magee (Jerry Spinelli)
CC2528	From the Mixed-Up Files of Mrs. Basil E. Frankweiler (E.L. Konigsburg)

LITERATURE KITS™ - Novel Study Guides

ITEM #	TITLE
CC2529	Sing Down the Moon (Scott O'Dell)
CC2530	The Phantom Tollbooth (Norton Juster)
CC2531	Gregor the Overlander (Suzanne Collins)
CC2532	Through the Looking-Glass (Lewis Carroll)
CC2533	Wonder (R.J. Palacio)
CC2534	Freak the Mighty (Rodman Philbrick)
CC2535	Tuck Everlasting (Natalie Babbitt)
CC2536	My Side of the Mountain (Jean Craighead George)
CC2537	Esperanza Rising (Pam Muñoz Ryan)
	GRADES 7-8
CC2700	Cheaper by the Dozen (Frank B. Gilbreth)
CC2701	The Miracle Worker (William Gibson)
CC2702	The Red Pony (John Steinbeck)
CC2703	Treasure Island (Robert Louis Stevenson)
CC2704	Romeo & Juliet (William Shakespeare)
CC2705	Crispin: The Cross of Lead (Avi)
CC2706	Call It Courage (Armstrong Sperry)
CC2707	The Boy in the Striped Pajamas (John Boyne)
CC2708	The Westing Game (Ellen Raskin)
CC2709	The Cay (Theodore Taylor)
CC2710	The Hunger Games (Suzanne Collins)
CC2711	Catching Fire (Suzanne Collins)
CC2712	The Pearl (John Steinbeck)
	GRADES 9-12
CC2001	To Kill A Mockingbird (Harper Lee)
CC2002	Angela's Ashes (Frank McCourt)
CC2003	The Grapes of Wrath (John Steinbeck)
CC2004	The Good Earth (Pearl S. Buck)
CC2005	The Road (Cormac McCarthy)
CC2006	The Old Man and the Sea (Ernest Hemingway)
CC2007	Lord of the Flies (William Golding)
CC2008	The Color Purple (Alice Walker)
CC2009	The Outsiders (S.E. Hinton)
CC2010	Hamlet (William Shakespeare)
CC2011	The Great Gatsby (F. Scott Fitzgerald)
CC2012	The Adventures of Huckleberry Finn (Mark Twain)
CC2013	Macbeth (William Shakespeare)
CC2014	Fahrenheit 451 (Ray Bradbury)
CC2015	The Crucible (Arthur Miller)
CC2016	Of Mice and Men (John Steinbeck)
CC2017	Divergent (Veronica Roth)

LANGUAGE ARTS - Books

CC1110	Word Families - Short Vowels Gr. K-1
CC1111	Word Families - Long Vowels Gr. K-1
CC1112	Word Families - Vowels Big Book Gr. K-1
CC1113	High Frequency Sight Words Gr. K-1
CC1114	High Frequency Picture Words Gr. K-1
CC1115	Sight & Picture Words Big Book Gr. K-1
CC1100	How to Write a Paragraph Gr. 5-8
CC1101	How to Write a Book Report Gr. 5-8
CC1102	How to Write an Essay Gr. 5-8
CC1103	Master Writing Big Book Gr. 5-8
CC1116	Reading Comprehension Gr. 5-8
CC1117	Literary Devices Gr. 5-8
CC1118	Critical Thinking Gr. 5-8
CC1119	Master Reading Big Book Gr. 5-8
CC1106	Reading Response Forms: Gr. 1-2
CC1107	Reading Response Forms: Gr. 3-4
CC1108	Reading Response Forms: Gr. 5-6
CC1109	Reading Response Forms Big Book: Gr. 1-6

MATHEMATICS - Books

ITEM #	TITLE
	TASK SHEETS
CC3100	Gr. PK-2 Number & Operations Task Sheets
CC3101	Gr. PK-2 Algebra Task Sheets
CC3102	Gr. PK-2 Geometry Task Sheets
CC3103	Gr. PK-2 Measurement Task Sheets
CC3104	Gr. PK-2 Data Analysis & Probability Task Sheets
CC3105	Gr. PK-2 Five Strands of Math Big Book Task Sheets
CC3106	Gr. 3-5 Number & Operations Task Sheets
CC3107	Gr. 3-5 Algebra Task Sheets
CC3108	Gr. 3-5 Geometry Task Sheets
CC3109	Gr. 3-5 Measurement Task Sheets
CC3110	Gr. 3-5 Data Analysis & Probability Task Sheets
CC3111	Gr. 3-5 Five Strands of Math Big Book Task Sheets
CC3112	Gr. 6-8 Number & Operations Task Sheets
CC3113	Gr. 6-8 Algebra Task Sheets
CC3114	Gr. 6-8 Geometry Task Sheets
CC3115	Gr. 6-8 Measurement Task Sheets
CC3116	Gr. 6-8 Data Analysis & Probability Task Sheets
CC3117	Gr. 6-8 Five Strands of Math Big Book Task Sheets
	DRILL SHEETS
CC3200	Gr. PK-2 Number & Operations Drill Sheets
CC3201	Gr. PK-2 Algebra Drill Sheets
CC3202	Gr. PK-2 Geometry Drill Sheets
CC3203	Gr. PK-2 Measurement Drill Sheets
CC3204	Gr. PK-2 Data Analysis & Probability Drill Sheets
CC3205	Gr. PK-2 Five Strands of Math Big Book Drill Sheets
CC3206	Gr. 3-5 Number & Operations Drill Sheets
CC3207	Gr. 3-5 Algebra Drill Sheets
CC3208	Gr. 3-5 Geometry Drill Sheets
CC3209	Gr. 3-5 Measurement Drill Sheets
CC3210	Gr. 3-5 Data Analysis & Probability Drill Sheets
CC3211	Gr. 3-5 Five Strands of Math Big Book Drill Sheets
CC3212	Gr. 6-8 Number & Operations Drill Sheets
CC3213	Gr. 6-8 Algebra Drill Sheets
CC3214	Gr. 6-8 Geometry Drill Sheets
CC3215	Gr. 6-8 Measurement Drill Sheets
CC3216	Gr. 6-8 Data Analysis & Probability Drill Sheets
CC3217	Gr. 6-8 Five Strands of Math Big Book Drill Sheets
	TASK & DRILL SHEETS
CC3300	Gr. PK-2 Number & Operations Task & Drill Sheets
CC3301	Gr. PK-2 Algebra Task & Drill Sheets
CC3302	Gr. PK-2 Geometry Task & Drill Sheets
CC3303	Gr. PK-2 Measurement Task & Drill Sheets
CC3304	Gr. PK-2 Data Analysis & Probability Task & Drills
CC3306	Gr. 3-5 Number & Operations Task & Drill Sheets
CC3307	Gr. 3-5 Algebra Task & Drill Sheets
CC3308	Gr. 3-5 Geometry Task & Drill Sheets
CC3309	Gr. 3-5 Measurement Task & Drill Sheets
CC3310	Gr. 3-5 Data Analysis & Probability Task & Drills
CC3312	Gr. 6-8 Number & Operations Task & Drill Sheets
CC3313	Gr. 6-8 Algebra Task & Drill Sheets
CC3314	Gr. 6-8 Geometry Task & Drill Sheets
CC3315	Gr. 6-8 Measurement Task & Drill Sheets
CC3316	Gr. 6-8 Data Analysis & Probability Task & Drills