1st Quarter Lesson Plan

Content: Science	**Grade/Course:** 4	**Timeline:** 45 minutes 08/31/15-09/04/15

Science Standard(s):

4.1.1 Observe that results of repeated scientific investigations are seldom exactly the same. When differences occur, propose an explanation for them using recorded information from the investigations.

4.1.2 Form and support a hypothesis after collecting information by gathering specimens or observing an experiment.

4.1.3 Differentiate between evidence gathered through observations and inferences, and use the evidence to develop a line of reasoning.

CCSS ELA Standards:

4.RI.3 Explain events, procedures, ideas or concerts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

4.W.7 Conduct short research projects that build knowledge through investigations of different aspects of a topic.

Lesson Overview:

In this lesson, students will be able to effectively use the scientific method and work together to observe an experiment. Through project-based learning, students are encouraged to find their own answers and draw their own conclusions.

Lesson Objective(s):

In this lesson, students will be able to

- improve your performance in a task through improved communication and cooperation
- reflect on your learning
- develop a standard operating procedure
- form and support a hypothesis

Vocabulary:

scientific method, hypothesis, experiment, axle, wheel, predict

Focus Question(s):

- What makes the use of the scientific method universal?

1st Quarter Lesson Plan

Description of Lesson (including instructional strategies):
Anticipatory Set:
Review the Scientific Method. Explain to students that they will be conducting an experiment. Encourage students to make
because ___.) Have students write down their data as they observe and conduct each experiment.

Day 1: 08/31/15 Index Card Tower Challenge
Teacher will ask the students the following question:
Does a tower need to have a wide base or a skinny base in order to be sturdy?

The teacher will then show the students an image of a giraffe and an elephant. Have the students compare their legs to see Teach students about the vocabulary terms base, sturdy, wide, and thin.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: the base of the tower needs to be sturdy so that…

Questions to prompt *discussion with the students:*
What is your design for your tower?
Are you going to build a tower with a wide base or a thin base?

~~Have students work in teams to design and build the tallest index card tower.~~

Guided Practice:
Students will work together in cooperative groups to design and build the tallest index card tower.(Marzano, Cooperative Learning).

Materials:
- Index Cards
- Tape
- Scissors

Instructions:
1. Each team must complete the construction of its tower within 30 minutes.
2. The index cards may be cut into pieces and reassembled as desired.
3. Tape is to be used to fasten parts of the tower together. It may not be used to attach the tower to the floor or any other object. Tape may not be used to extend the height of the tower.
4. A tower shall be declared free-standing if it remains self-supporting for more than 10 seconds. 5. Height is determined by measuring the perpendicular distance from the base of the tower to the highest point of the tower.
6. The highest tower will be declared the winner with the rest of the competitors ranked accordingly.

Formative Assessment:

- Q & A and final product of the tower. Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).

- Describe the shape or construction of the tower that was the tallest and won the challenge?
- If you had a chance to do this project again, what would your team have done differently?
- Do you think that this activity was more rewarding to do as a team, or would you have preferred to work alone on it? Why?
- If you could have used one additional material (tape, glue, wood sticks, foil as examples) which would you choose and why?

Closure:

Groups will share with the rest of the class their understanding the base of the tower needs to be sturdy so that it can be self-supporting.

Independent Practice:

- Students will work independently to make a prediction about the index card tower and answer the evaluation questions.

Day 2: 09/01/15 Park Under the Ramp

Teacher will ask the students the following question:

What rules help predict where the rolling cup will end up?

The goal is to make the cup roll off the ramp and end up "parked" under the ramp.

Instructions and Strategies:

Help students focus on the supporting facts and details for the main idea: A paper cup placed on its side on a sloped surface will roll away in a curved path, acting like a wheel and axle (a rod passing through the center of a wheel) system with two different sized wheels.

Question to prompt *discussion with the students:*

How do you think the cup will roll?

Have students work in teams to predict where and how they will get the cup to roll under the ramp.

Guided Practice:

Students will work together in cooperative groups to predict where and how they will get the cup to roll under the ramp

Instructions:

1. Place the cup at the top of the ramp.
2. Position the cup to where you predict it will roll under the ramp.

Materials:

- 1 cup
- Ramp
- 6 clothes pins

Formative Assessment:

Q & A of the outcome of experiment. Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).

- Describe the shape of the cup that made this experiment a challenge?
- If you had a chance to do this project again, what would your team have done differently?
- What rules help predict where the rolling cup will end? A paper cup placed on its side on a sloped surface will

Closure:

Groups will share with the rest of the class their understanding of how the cup will always

Day 3: 09/02/15 Roll Weighted Cups in Straight Lines

Teacher will ask the students the following question:

What happens when you add penny weights to a straight wheel?

The goal is to build a wheel system that can roll straight and investigate what happens when you add weights to differe

Instruction and Strategies:

Help students focus on the supporting facts and details for the main idea: the placement of the pennies will determine how the weighted cups will roll.

Questions to prompt *discussion with the students:*

What is your design for your tower?

Are you going to build a tower with a wide base or a thin base?

Have students work in teams to design and build the tallest index card tower.

Guided Practice:

Students will work together in cooperative groups to design and build the tallest index card tower. (Marzano, Cooperative)

Materials:
- 2 Foam Cups
- Tape
- 2 pennies

Instructions:

- Build a wheel system that can roll straight. Now roll it.
- Then tape a penny to the bottom of each cup then roll it.
- Next, remove the pennies and leave the pennies loose inside the cups. Roll it.
- Last, remove the pennies and tape a penny to the outside of each cup. Roll it.

Formative Assessment:

Q & A of the outcome of experiment. Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).

- What happened when you taped a penny to the bottom of each cup?

  The system rolled faster with pennies taped on the bottom of a cup.

- What happened when you placed a penny loose in each cup?

  The system rolled slower with pennies loose between cup bottoms.

- What happened when you taped a penny to the outside of each cup?

  The system didn't roll at all with pennies taped on the outside of the cup.

  The system bumped along as it rolled with pennies on the outside of the cup.

Closure:

Groups will share with the rest of the class their understanding of how the cup will always roll in a curved path because both ends of the cup are not the same size.

Independent Practice:

Day 4: 09/03/15 Twirly Bird

Teacher will ask the students the following question:
What happens to the motion of the Twirly bird when the design changes?

The goal is to make a twirly bird that creates motion from the interaction of the forces of gravity and air resistance.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Twirler performance is affected by variables, including wing size and shape.

Have students work in pairs to observe and form a hypothesis when the design of the twirly bird changes.

Guided Practice:
Students will work together in cooperative teams to design and observe and be able to differentiate between two twirly birds.(Marzano, Cooperative Learning).

Materials:
- 2 Twirly Bird patterns
- Paper clips
- Scissors

Instructions:

- Cut two Twirly birds apart on the solid line. Now you have two identical patterns. (save the second pattern for later).
- Make the three cuts on the solid lines.
- Fold one side flap, over the words twirly bird. ▪ Fold the other flap over the first flap.
- Slide a paper clip on the bottom of the folded section.
- Fold the wings, in opposite directions, and raise it in the air and let go.
- The first Twirly bird will be used as the standard (original design).
- Design another twirly bird by changing one variable (something that is changed that might affect the outcome) on the twirly bird by cutting the wings shorter.
- Compare the motion between the two.

Formative Assessment:
Q & A of the outcome of experiment. Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).

What happens to the motion of the Twirly bird when the design changes?

Twirler performance is affected by variables, including wing size and shape.

The shorter wings will make the twirly bird spin faster.

Closure:

Groups will share with the rest of the class their understanding of how the twirler performance is affected by different variables.

Independent Practice:

Students will work independently to make a prediction about the twirler performance and answer the evaluation question.

Day 5: 09/02/15 Catapult Challenge

Teacher will ask the students the following question:

How can changing variables affect the distance a catapult can launch an object?

The goal is to design and construct a working catapult.

Instruction and Strategies:

Help students focus on the supporting facts and details for the main idea: the different variables affect the distance a catapult can launch an object.

Question to prompt *discussion with the students:*

What is your design for your catapult?

Have students work in teams to design and construct a working catapult.

Guided Practice:

Students will work together in cooperative groups to design and construct a working catapult. (Marzano, Cooperative Learning).

Materials:

- Popsicle sticks
- Tape
- Plastic Spoon -
Rubber bands
- Cup
- Rolled up paper

Instructions:

- Each team must design and construct a catapult.
- The catapult must be able to launch a marshmallow.

**Extension: Modify your catapult to launch marshmallows to land in a cup or hit a target or measure the distance it lands.

Formative Assessment:

Q & A of the outcome of the catapult challenge. Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).

- How can changing variables affect the distance a catapult can launch an object?

Increasing the tension in the spoon will result in launching an object in a farther distance.

Decreasing the tension will result in the object launching in a shorter distance.

Closure:

Groups will share with the rest of the class their understanding of how the changing variables can affect the distance a catapult can launch an object.

Independent Practice:

Students will work independently to make a prediction about the catapult tower and answer the evaluation question.

Accommodations/Modifications:

- Cooperative groups will consist of students of various levels so they can help each other.
- If needed, there can be a small group of students on which the teacher focuses his/her attention.

Resources:

- **Harcourt Science**
- **http://www.pbs.org/teachers/stem/**
- **http://www.mastersindatascience.org/blog/the-ultimate-stem-guide-for-kids-239-cool-sites-about-science-technology-engineering-and-math/**
- **http://stem-works.com/activities**
- **http://www.nsfresources.org/topic.cfm?topic=IM**
- **https://www.teacherspayteachers.com/Browse/Grade-Level/Kindergarten/Search:stem**
- **http://www.maryville-schools.org/site/Default.aspx?PageID=4713**
- **www.sciencebob.com**

Materials:

- **Index cards**
- **Tape**
- **Scissors**
- **Twirly Bird Patterns**
- **paper clips** •
Cardboard • **Foam**
Cups
- **Pennies**
- **Popsicle Sticks**

Content: Science	**Grade:** 4th	**Timeline:** 45 minutes 9/08/15-09/11/15

Science Standard(s):

4.1.1 Observe that results of repeated scientific investigations are seldom exactly the same. When differences occur, propose an explanation for them using recorded in formation from the investigations.

4.1.2 Form and support a hypothesis after collecting information by gathering specimens or observing an experiment.

4.1.3 Differentiate between evidence gathered through observations and inferences, and use the evidence to develop a line of reasoning.

CCSS ELA Standards:

4.RI.3 Explain events, procedures, ideas or concerts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

4.W.7 Conduct short research projects that build knowledge through investigations of different aspects of a topic.

Lesson Overview:	**Lesson Objective(s):**
In this lesson, students will be able to explain their understanding of the scientific method and design an experiment utilizing this method. Through project-based learning, students are encouraged to find their own answers and draw their own conclusions.	In this lesson, students will be able to • Explain the steps of the scientific method. • Apply the scientific method to plan and conduct a study/experiment. • Improve your performance in a task through improved communication and cooperation • Form and support a hypothesis • Develop a standard operating procedure • Reflect on your learning
Vocabulary: Scientific method, observe, hypothesis, variable, compare, classify, predict, infer, measure	**Focus Question(s):** What makes the use of the scientific method universal?

Description of Lesson (including instructional strategies):

Anticipatory Set:

Review the steps of the Scientific Method. Explain to students that they will be conducting an experiment. Encourage students to make a prediction. *I think* ____ *because* ____. Have students write down their data as they observe and conduct each experiment.

Day 1: 9/08/15 Tuesday Straw Slider

Teacher will ask the students the following question:

How can you use magnets to do slider tricks?

The goal is to make the magnet attached to the straw slider attract the paper clips.

Instruction and Strategies:

Help students focus on the supporting facts and details for the main idea: The secret to moving the slider is lots of friction- *a force that resists motion.* When you pull a string, the slider twists. This forces one of the straws to turn and lock onto the string. The friction between the turned straw and its string keeps it from sliding. By first pulling one string and then pulling the other, you can make the slider move forward. The magnet will attract the paper clips depending on how close it is to the paper clips.

Questions to prompt *discussion with the students:*

What happens when magnets interact with paper clips?

While holding both ends of the string, what happens when you pull one string toward you?

Have students work in teams to predict how the slider will be able to attract magnets?

Guided Practice:

Students will work together in cooperative groups to predict how the slider will be able to attract magnets. (Marzano, Cooperative Learning)

Materials:

- 1 large index card or card stock (cut into 3-inches by 5-inches)
- 20 feet of string
- Paper clips
- Drinking straw (cut into 1-inch sections)
- Tape
- Magnet
- Chair

Instructions:

1. Securely tape two pieces of cut straw onto the index card or card stock. Make sure the straws slant toward the center of the paper's edge.
2. Loop the string around a chair leg.
3. Make sure the straws are facing down. Then slide the ends of the strings through its own straw piece.
4. Move the slider forward by moving one string. Then pull the other string.

5. Decide on the best place to attach a magnet. Then tape the magnet onto the slider.
6. Scatter paper clips on the floor below the string from one end of the string to the other.
7. When your magnet is over the paper clips, pick them up. Keep picking up objects until you get from one end to the other.

Formative Assessment:

- Q & A and final product of the straw slider. Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback)
- If you had a chance to do this activity again, what would you have done differently?

Closure:

Groups will share with the rest of the class their understanding that the straw slider needs lots of friction in order to slide from one end of the string to the other. The slider will only be able to attract the paper clips when a magnet is taped to the bottom of it, if the magnet is close enough to the paper clips.

Independent Practice:

Students will work independently to make a prediction about the straw slider and answer the evaluation questions.

Description of Lesson (including instructional strategies):

Day 2: 9/09/15 Marble Maze

The teacher will ask the following question:

Will the marble make it from one end of the maze to the other?

The goal is to design and construct a cereal box marble maze on which the marble can travel and the marble must change position at least 3 times.

Instruction and Strategies:

Help students focus on the supporting facts and details for the main idea: Building a marble maze is a fun hands-on science activity and a great way to get students involved in an exciting engineering challenge—one that has clear and immediate results. The marble should be able to enter one end of the maze and exit through the other end.

Guided Practice:

Students will work together in cooperative groups (Marzano, Cooperative Learning) to design and construct a marble maze.

Materials:

- 1 cereal box or shoe box
- Straws
- Popsicle sticks
- Marble
- Tape

Instructions:

1. Illustrate your groups design before constructing the marble maze.
2. Securely tape the sides of your cereal box or shoe box.
3. If using a cereal box, cut off the top part of the box with scissors.
4. Cut off a corner, at the top of the box, where the marble will enter.
5. Cut off a corner, at the bottom of the box, where the marble will exit.
6. Begin constructing your maze. Make sure the spaces are large enough for the marble you will be using.
7. Test your maze, make sure the marble passes through the maze correctly.

Formative Assessment:

- Q&A and the final product of the marble maze. Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).
- Will the marble make it from top to bottom?
- What design modifications might increase the marble's speed?
- What could you have done differently?

Closure:

Groups will share with the rest of the class their conclusions of the marble maze and that the design and construction will determine how quickly a marble can enter and exit the maze successfully.

Independent Practice:

Students will work independently to make a prediction and answer the evaluation questions.

Description of Lesson (including instructional strategies):

Day 3: 9/10/15 Building Boats

The teacher will ask the following question:

How much weight (pennies/paper clips) will your boat hold?

The goal is to design and construct a boat that will float and hold the weight of pennies/paper clips.

Instruction and Strategies:

Help students focus on the supporting facts and details for the main idea: The boat design and construction must be sturdy enough to float and support the most weight.

Explain to students that they will work cooperatively in a boat-building challenge. Allow enough time for them to brainstorm, design, construct and test their models.

When students have had time to test and improve their models, host a Classroom Boat Design Competition. Each group should be prepared to explain the rationale for its boat design before testing the weight it will support. Encourage students to record the weight for each model in their notebooks for data collection so that all students will be involved in identifying the winner.

Questions to prompt *discussion with the students:*

- What design do you think will work best for this activity?

Guided Practice:
Students will work together in cooperative groups (Marzano, Cooperative Learning) to design and construct a boat that will float and hold the most weight.

Materials:

- Index cards
- Straws
- Popsicle sticks
- Paper clips/pennies
- Aluminum foil
- Tape
- Water container (dish pan/plastic bin)
- Water
- Paper towels

Instructions:
1. Illustrate your groups design before constructing the boat.
2. Decide what materials you want to use wisely.
3. Remember, the goal of this activity is for the boat to float and hold the most weight.
4. Once you are done constructing your boat, the teacher will test your boat by placing it into a container of water.

Formative Assessment:
- Q&A and final product review of the boat. Check for understanding: Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).
- Were the students able to design and construct a boat that could float and hold weight?
- How could you modify the design of the raft so it would hold more weight?

Closure:
Groups will share with the rest of the class their conclusions of building boats and their understanding of the importance of the design and construction for it to float and hold weight.

Independent Practice:
Students will work independently to form a hypothesis and explain the experimental result.

Description of Lesson (including instructional strategies):
Day 4: 9/11/15 Building Airplanes
The teacher will ask the following question:
What makes a paper airplane fly?

The goal is to choose a design and construct a paper airplane that will glide smoothly and gently, flying straight or in a gradual curve.

Instruction and Strategies:
The teacher will introduce the website http://www.10paperairplanes.com/

Help students focus on the supporting facts and details for the main idea: The paper airplane design must be able to glide smoothly and gently when tossed into the air based on the types of force(s) used.

When a paper airplane is in the air, there's a delicate balance between the downward force of *gravity* (attracts a body towards the center of the earth) on the plane and the upward force of the air.

The plane will balance on one finger at its center of gravity (or on two fingers straddling its center of gravity).

The forces of the wind on the airplane can also be treated as one force acting through a point called the "center of lift."

Questions to prompt *discussion with students:*
What design do you think will work best with this activity?

Guided Practice:
Students will work independently in choosing a design from the website and construct one of the 10 paper airplanes.

Materials:

- 10paperairplanes website
- projector/promethean board
- printer paper
- tape

Instructions:

1. The teacher will display the website and introduce the 10 different paper airplane designs.
2. Students will choose an airplane design they would like to construct.
3. The teacher will go through the steps of the airplane designs chosen.
4. Once each student has constructed a paper airplane, they will find a partner to compare the different designs of the airplane and have a flight contest to see which glides higher and farthest.

Formative Assessment:
- Q&A and final product review of the paper airplane. Check for understanding: Provide feedback based on their understanding of the lesson learned. (Marzano: Providing Feedback).
- Were the students able to construct a paper airplane that would glide smoothly and gently?

Closure:
Students will share with the rest of the class their conclusions of constructing paper airplanes and their understanding of the importance of the design and construction for it to glide smoothly and gently.

Independent Practice:
Students will work independently to form a hypothesis about the paper airplane design they chose, construct a paper airplane, and explain the experimental result.

Resources:
Harcourt Science- 4th Grade
Spectrum Science- Grade 4
http://www.educationworld.com/a_lesson/cre8time/build-boat-buoyancy.shtml
http://pbskids.org/designsquad/build/treasure-grab/
http://www.10paperairplanes.com/

Materials:

- 1 large index card or card stock (cut into 3-inches by 5-inches)
- 20 feet of string
- Paper clips
- Drinking straw (cut into 1-inch sections)
- Tape
- Magnet
- Chair
- 1 cereal box or shoe box
- Straws
- Popsicle sticks
- Marble
- Tape
- Index cards
- Straws
- Popsicle sticks
- Paper clips/pennies
- Aluminum foil
- Tape
- Water container (dish pan/plastic bin)
- Water
- Paper towels
- 10paperairplanes website
- projector/promethean board
- printer paper
- tape

Accommodations:
Cooperative groups will consist of students of various levels so they can help each other.
If needed, there can be a small group of students on which the teacher focuses his/her attention.

Content: Science: Living Things	**Grade:** 4th	**Timeline:** 45 minutes 9/14/15-09/17/15

Science Standard(s):

4.2.1 Observe and describe how a source of energy is needed for all organisms to stay alive and grow.

4.2.3 Observe and describe how organisms depend on each other to survive, such as providing food for one another or assisting with seed dispersal.

4.2.5 Observe and explain why most plants produce more seeds than the number that actually grow into new plants.

4.2.6 Explain how in all environments, organisms are growing, dying and decaying, and new organisms are being produced by the old ones. (Examples: Draw and explain the life cycles of plants and animals, and human beings.

CCSS ELA Standards:

4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

4.RI.3 Explain events, procedures, ideas or concerts in a historical, scientific, or technical

Lesson Overview:

In this lesson, students will be able to explore the different types of living things and find that they all have at least one thing in common: they are all made up of cells.

Lesson Objective(s):

In this lesson, students will be able to

- Explain that all living things are made up of one or more cells
- Recognize that different kinds of cells have different parts.
- Identify features of animals
- Describe how body plans and support systems are used to classify animals.
- Identify seeds as reproductive cells of plants.
- List features and examples of plants that reproduce with seeds.
- Identify that fungi spores produce new fungi
- Describe the features of fungi

Vocabulary:

Cell, cell membrane, cytoplasm, nucleus, cell wall, chloroplast, microorganism, vertebrate, invertebrate, arthropod, embryo, flower, fruit, fungi, hyphae, spore, mold

Focus Question(s):

- How do organisms rely on each other to survive?
- What sources of energy are needed for organisms to thrive?
- How do the life cycles of various organisms benefit the ecosystem?
- If plants produce many seeds, why don't we have an overabundance of plants?
- How does studying cycles help us understand actual processes?

Description of Lesson (including instructional strategies):
Anticipatory Set:
Have students make a KWL chart (found on p.A3 of the TE). Ask them to look at the chapter title And fill in the first two columns. Have them make predictions about the chapter. Have them fill in t third column as they study the chapter.

Day 1: 9/14/15 What are Cells? p.A6
I can explain that all living things are made up of one or more cells.
I can recognize that different kinds of cells have different parts.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Cells are the building blocks of living things.

- Teacher will lead a whole class discussion; ask the class What are cells? (Cells are the basic unit of structure and function in a living thing.)
- Preview the vocabulary terms on p. A6
- Read as a class pages A6-A11.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A6.
- Have students copy and answer the review questions on p. A11.
- Integrate Art: Have students draw and label the animal and plant cells from the lesson.

Description of Lesson (including instructional strategies):
Day 2: 9/15/15 What are Animals? p.A14
I can discover the features of animals.
I can identify some examples of simple and complex animals.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: the simplest animals are sponges.

- Teacher will lead a whole class discussion; ask the class What are animals? (Animals are many celled living things that cannot make their own food. Some animals, called simple animals, have bodies made up of only a few types of cells.)
- Preview the vocabulary terms on p. A14
- Read as a class pages A14-A17.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A14.
- Have students copy and answer the review questions on p. A17.
- Integrate Art: Classifying Animals
  Have students draw pictures of animals that are grouped as invertebrates and vertebrates.

Description of Lesson (including instructional strategies):
Day 3: 9/16/15 What are Plants with Seeds? p.A20
I can identify features of plants with seeds.
I can identify some examples of plants that have seeds.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: a seed is a plant part from which a new plant can grow.

- Teacher will lead a whole class discussion; ask the class What are Plants with Seeds? (Plants that form seeds are classified into two groups-cone bearing plants such as pine trees, and flowering bearing plants such as grape vines.)
- Preview the vocabulary terms on p. A20
- Read as a class pages A20-A23.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A20.
- Have students copy and answer the review questions on p. A23.

Description of Lesson (including instructional strategies):
Day 4: 9/17/15 What are Fungi? p.A24
I can identify the body parts of fungi.
I can explain how fungi reproduce.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Fungi are no longer classified as plants, but as their own group of organisms.

- Teacher will lead a whole class discussion; ask the class What are Fungi? (Fungi are single-celled or many-celled living things that cannot make their own food.
- Preview the vocabulary terms on p. A26
- Read as a class pages A26-A29.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A26.
- Have students copy and answer the review questions on p. A29.
- Extension, Hands-on Activity: Growing Bread Mold
  Provide groups of students a slice of bread. Have each group place it into a zippered plastic bag. Have some groups add a small amount of water into the interiors of their bag, and have the other groups leave their nags dry. Have all groups tape their bags closed after sealing them. Suggest that some students place their bags in a warm dark drawer and some on a warm window ledge. Challenge students to predict under which conditions will mold rapidly begin to grow on the bread. Have groups observe their sealed bags every day for two weeks and record their observations. Then have groups compare their results to see which predictions were correct.

Formative Assessment:
Students will complete the workbook pages from each lesson.
What are Cells? Workbook p. WB6
What are Animals? Workbook p. WB11
What are Plants with Seeds? Workbook p. WB16
What are Fungi? Workbook p. WB21

Closure:
Students will share with the rest of the class their understanding of living things.

Independent Practice:
Students will work independently to complete the workbook assessment pages for each lesson.

Resources:
Harcourt Science- 4th Grade
Harcourt Science Workbook
Pencil
Paper

Accommodations:
Cooperative groups will consist of students of various levels so they can help each other.
If needed, there can be a small group of students on which the teacher focuses his/her attention.
Have ESL students learn new words by selecting words in the dictionary and using them in sentences.

Content: Science: Animal Growth and Adaptations	**Grade:** 4th	**Timeline:** 45 minutes Sept. 21-25

Science Standard(s):

4.2.1 Observe and describe how a source of energy is needed for all organisms to stay alive and grow.

4.2.3 Observe and describe how organisms depend on each other to survive, such as providing food for one another or assisting with seed dispersal.

4.2.6 Explain how in all environments, organisms are growing, dying and decaying, and new organisms are being produced by the old ones. (Examples: Draw and explain the life cycles of plants and animals, and human beings.

CCSS ELA Standards:

4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

4.RI.3 Explain events, procedures, ideas or concerts in a historical, scientific, or technical

Lesson Overview:

In this lesson, students will be able to recognize that all animals have something in common. They all have adaptations that help them live and grow.

Lesson Objective(s):

In this lesson, students will be able to

- Recognize that all animals have five basic needs: food, water, oxygen, shelter, and climate
- Conclude that animals meet their needs in different ways
- Identify three adaptations birds have to help them meet their needs
- Describe animal body part adaptations that enable them to meet their needs
- Identify ways animals behave to enable them to meet their needs.
- Distinguish between instinctual behavior and learned behavior in animals

Vocabulary:

Environment, climate, oxygen, shelter, metamorphosis, adaptation, camouflage, mimicry, instinct, migration, hibernation

Focus Question(s):

- How do organisms rely on each other to survive?
- What sources of energy are needed for organisms to thrive?
- How do the life cycles of various organisms benefit the ecosystem?
- How does studying cycles help us understand actual processes?

Description of Lesson (including instructional strategies):
Day 1: 9/21/15 What are the Basic Needs of Animals? p. A38

I can recognize that all animals have five basic needs: food, water, oxygen, shelter, and climate.
I can conclude that animals meet their needs in different ways.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: An animal meets its basic needs (food, water, and shelter) in its environment.

- Teacher will lead a whole class discussion; ask the class <u>What are the basic needs of animals?</u> (Animals need food, water, and shelter.)
- Preview the vocabulary terms on p. A40
- Read as a class pages A40-A45.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A40.
- Have students copy and answer the review questions on p. A45.
- Integrate Art: **Building a Bird's Nest** p. A65
  Have students make a model of an animal home.

Description of Lesson (including instructional strategies):
Day 2: 9/22/15 How Do Animals' Body Parts Help Them Meet Their Needs? p. A46

I can identify three adaptations birds have to help them meet their needs.
I can describe animal body part adaptations that enable them to meet their needs.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Animal body part adaptations to meet basic needs are beaks, body coverings, camouflage, and mimicry.

- Teacher will lead a whole class discussion; ask the class <u>How do animals' body parts help them meet their needs?</u> (Animals have adaptations, which enable them to meet their needs. Adaptations include body coverings and the shapes, sizes, and colors of body parts.)
- Preview the vocabulary terms on p. A48
- Read as a class pages A48-A53.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A48.
- Have students' copy and answer the review questions on p. A53.

Description of Lesson (including instructional strategies):
Day 3: 9/23/15 How Do Animals' Behaviors Help Them Meet Their Needs? p. A56
I can identify ways animals behave to enable them to meet their needs.
I can distinguish between instinctual behavior and learned behavior in animals.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Animals behave in ways that enable them to meet their needs. The behaviors are adaptations to their environments. Some behaviors are instincts while others are learned.

- Teacher will lead a whole class discussion; ask the class How Do Animals' Behaviors Help Them Meet Their Needs? (Animals behave in ways that enable them to meet their needs. The behaviors are adaptations to their environments. Some behaviors are instincts while others are learned.)
- Preview the vocabulary terms on p. A56
- Read as a class pages A56-A61.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A56.
- Have students copy and answer the review questions on p. A61.

Description of Lesson (including instructional strategies):
Day 4: 9/24/15 Science and Technology: Robot Roaches and Ants p. A62
I can evaluate the impact of research and technology on scientific thought, society, and the environment.
I can identify careers related to science.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson title and then to outline the article.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Living things can be combined with technology to solve problems.

- Read as a class pages A62-A63.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Have students copy and answer the Think About It questions on p. A63.
- **Reading Mini-Lesson: Distinguish Fact or Opinion** p. A62
  Have students identify each of the sentences as either fact or opinion. Then challenge students to write two facts and two opinions regarding robot insects using the information given in the article.

Description of Lesson (including instructional strategies):
Day 5: 9/25/15 People in Science: Jane Goodall, Animal Behaviorist p. A64
I can connect chapter concepts with the contributions of scientists.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and then to outline the article.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Living things can be combined with technology to solve problems.

- Read as a class pages A64.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Have students copy and answer the Think About It questions on p. A64.

Formative Assessment:
Students will complete the workbook pages from each lesson.
How Do Animals Body Parts Help Them Meet Their Needs? Workbook p. WB34
How Do Animals' Behaviors Help Them Meet Their Needs? Workbook p. WB39

Closure:
Students will share with the rest of the class their understanding of animal growth and aptations.

Independent Practice:
Students will work independently to complete the workbook assessment pages for each lesson.

Resources:
Harcourt Science- 4th Grade
Harcourt Science Workbook
Pencil
Paper
Large paper plate
small twigs
leaves
string or yarn
feathers (optional)
mud or dirt (optional)

Accommodations:
Cooperative groups will consist of students of various levels so they can help each other.
If needed, there can be a small group of students on which the teacher focuses his/her attention.
Have ESL students learn new words by selecting words in the dictionary and using them in sentences.

Content: Science: Plant Growth and Adaptations	**Grade:** 4th	**Timeline:** 45 minutes 9/28/15-10/02/15

Science Standard(s):

4.2.1 Observe and describe how a source of energy is needed for all organisms to stay alive and grow.

4.2.3 Observe and describe how organisms depend on each other to survive, such as providing food for one another or assisting with seed dispersal.

4.2.6 Explain how in all environments, organisms are growing, dying and decaying, and new organisms are being produced by the old ones. (Examples: Draw and explain the life cycles of plants and animals, and human beings.

CCSS ELA Standards:

4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

4.RI.3 Explain events, procedures, ideas or concerts in a historical, scientific, or technical

Lesson Overview:

In this lesson, students will be able to recognize that there are many different kinds of plants. But all plants need the same basic things to live and grow.

Lesson Objective(s):

In this lesson, students will be able to

- Identify the four basic needs of plants.
- Explain how plants make food.
- Give examples of plant adaptations.
- Explain how plant adaptations enable plants to survive in different environments.
- Identify ways that leaves, stems, and roots help plants live.
- Give examples of unusual plant adaptations.
- Describe the ways plants reproduce.
- Give examples of ways seeds are spread.
- Identify careers related to science.
- Evaluate the impact of research and technology on scientific thought, society, the environment.

Vocabulary:

Carbon dioxide, nutrient, photosynthesis, dormancy, transpiration, taproot, fibrous root, germinate, stamen, pistil, pollination, spore, tuber

Focus Question(s):

- How do organisms rely on each other to survive?
- What sources of energy are needed for organisms to thrive?
- How do the life cycles of various organisms benefit the ecosystem?
- How does studying cycles help us understand actual processes?

Description of Lesson (including instructional strategies):
Day 1: 9/28/15 What Do Plants Need to Live? p. A72
I can recognize Identify the four basic needs of plants.
I can explain how plants make food.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Plants need air, nutrients, water, and light to live. Their leaves make food through photosynthesis.

- Teacher will lead a whole class discussion; ask the class <u>What do plants need to live?</u> (Plants need air, nutrients, water, and light.)
- Preview the vocabulary terms on p. A72
- Read as a class pages A72-A75.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A72.
- Have students copy and answer the review questions on p. A75.

Description of Lesson (including instructional strategies):
Day 2: 9/29/15 How Do Leaves, Stems, and Roots Help Plants Live? p. A78
I can identify ways that leaves, stems, and roots help plants live.
I can give examples of unusual plant adaptations.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Plants have leaf, stem, and root adaptations that help meet their needs. Some plants have parts that trap and digest insects to get needed nutrients.

- Teacher will lead a whole class discussion; ask the class <u>How Do Leaves, Stems, and Roots Help Plants Live?</u> (Animals have adaptations, which enable them to meet their needs. Adaptations include body coverings and the shapes, sizes, and colors of body parts.)
- Preview the vocabulary terms on p. A78
- Read as a class pages A78-A81.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A78.
- Have students' copy and answer the review questions on p. A81.

Description of Lesson (including instructional strategies):
Day 3: 9/30/15 How Do Plants Reproduce? p. A84
I can identify the ways plants reproduce.
I can identify examples of ways seeds are spread.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Plants reproduce by seeds and spores.

- Teacher will lead a whole class discussion; ask the class How Do Plants Reproduce? (Plants reproduce by seeds and spores.)
- Preview the vocabulary terms on p. A84
- Read as a class pages A84-A87.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A84.
- Have students copy and answer the review questions on p. A87.

Description of Lesson (including instructional strategies):
Day 4: 10/01/15 Science and Technology: Super Veggies p. A88
I can evaluate the impact of research and technology on scientific thought, society, and the environment.
I can identify careers related to science.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson title and then to outline the article.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Some plant parts that can be altered to change their color, taste, and nutritional value.

- Read as a class pages A88-A89.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Have students copy and answer the Think About It questions on p. A89.

Description of Lesson (including instructional strategies):
Day 5: 10/02/15 People in Science: Mary Agnes Meara Chase: Botanist p. A90
I can connect chapter concepts with the contributions of scientists.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and then to outline the article.

Instruction and Strategies:

- Read as a class pages A90.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Have students copy and answer the Think About It questions on p. A90.
- Integrate Art: How can you identify trees? p. A91

Formative Assessment:
Students will complete the workbook pages from each lesson.
What Do Plants Need to Live? Workbook p. WB47
How Do Leaves, Stems, and Roots Help Plants Live? Workbook p. WB52
How Do Plants Reproduce? Workbook p. WB57

Closure:
Students will share with the rest of the class their understanding of plant growth and adaptations.

Independent Practice:
Students will work independently to complete the workbook assessment pages for each lesson.

Resources:
Harcourt Science- 4th Grade
Harcourt Science Workbook
Pencil
Paper
Colored pencils
3 ziploc bags
leaves
bark
seeds

Accommodations:
Cooperative groups will consist of students of various levels so they can help each other.
If needed, there can be a small group of students on which the teacher focuses his/her attention.
Have ESL students learn new words by selecting words in the dictionary and using them in sentences.

Content: Science: Human Body Systems	**Grade:** 4th	**Timeline:** 45 minutes 10/05/15-10/09/15

Science Standard(s):

4.2.1 Observe and describe how a source of energy is needed for all organisms to stay alive and grow.

4.2.3 Observe and describe how organisms depend on each other to survive, such as providing food for one another or assisting with seed dispersal.

4.2.6 Explain how in all environments, organisms are growing, dying and decaying, and new organisms are being produced by the old ones. (Examples: Draw and explain the life cycles of plants and animals, and human beings.

CCSS ELA Standards:

4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

4.RI.3 Explain events, procedures, ideas or concerts in a historical, scientific, or technical

Lesson Overview:

In this lesson, students will be able to recognize that the human body is made up of many different parts that work together.

Lesson Objective(s):

In this lesson, students will be able to

- Identify the basic parts that make up the body.
- Explain how the skeletal and muscular systems work.
- Describe what breathing does for the body.
- Identify why blood is important to the body's cells.
- Describe how the nervous system controls all the body's systems.
- Analyze what the digestive system does for the body.
- Evaluate the impact of research and technology on scientific thought, society, and the environment.
- Identify careers related to science.

Vocabulary:

Tissue, organ, cardiac muscle, smooth muscle, striated muscle, lungs, capillary, heart, artery, vein, brain, neuron, nerve, spinal cord, esophagus, stomach, small intestine, large intestine

Focus Question(s):

- How do organisms rely on each other to survive?
- What sources of energy are needed for organisms to thrive?
- How do the life cycles of various organisms benefit the ecosystem?
- How does studying cycles help us understand actual processes?

Description of Lesson (including instructional strategies):
Day 1: 10/05/15 How Do the Skeletal and Muscular Systems Work? p. A96-101
I can recognize Identify the basic parts that make up the body.
I can explain how the skeletal and muscular systems work.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: The body is made up of basic parts called cells. Cells make up tissues, tissues make up organs, and organs make up body systems. The skeletal and muscular systems work together to make the body move.

- Teacher will lead a whole class discussion; ask the class How Do the Skeletal and Muscular Systems Work? (The skeletal and muscular systems work together to make the body move.)
- Preview the vocabulary terms on p. A96
- Read as a class pages A96-A101.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A96.
- Have students copy and answer the review questions on p. A101.

Description of Lesson (including instructional strategies):
Day 2: 10/06/15 How Do the Respiratory and Circulatory Systems Work? p. A102-107
I can describe what breathing does for the body.
I can identify why blood is important to the body's cells.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Lungs are the organs the body uses to breathe. Breathing trades carbon dioxide, a waste cells give off, for oxygen, which cells need. Blood carries gases to and from cells through blood vessels. The heart pumps blood through the body.

- Teacher will lead a whole class discussion; ask the class How Do the Respiratory and Circulatory Systems Work? (Lungs are the organs the body uses to breathe. The heart pumps blood through the body.
- Preview the vocabulary terms on p. A102
- Read as a class pages A102-A107.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A102.
- Have students' copy and answer the review questions on p. A107.

Description of Lesson (including instructional strategies):
Day 3: 10/07/15 How Do the Nervous and Digestive Systems Work? p. A108-113
I can describe how the nervous system controls all the body's systems.
I can analyze what the digestive system does for the body.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: The brain sends messages to and from all parts of the body through the spinal cord and nerves. It controls the way all other body systems work. The digestive system breaks down food to provide nutrients for all the body's cells.

- Teacher will lead a whole class discussion; ask the class How Do the Nervous System and Digestive System Work? (The brain sends messages to and from all parts of the body through the spinal cord and nerves. It controls the way all other body systems work. The digestive system breaks down food to provide nutrients for all the body's cells.)
- Preview the vocabulary terms on p. A108
- Read as a class pages A108-A113.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Students will copy and define the vocabulary terms on p. A108.
- Have students copy and answer the review questions on p. A113.

Description of Lesson (including instructional strategies):
Day 4: 10/08/15 Science and Technology: Skin Adhesive p. A114-115
I can evaluate the impact of research and technology on scientific thought, society, and the environment.
I can identify careers related to science.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson title and then to outline the article.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: The skin is the largest organ in the human body. Its functions are controlled by the nervous system.

- Read as a class pages A114-A115.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Have students copy and answer the Think About It questions on p. A115.

Description of Lesson (including instructional strategies):
Day 5: 10/09/15 People in Science: Rosalyn Sussman Yalow: Medical Physicist p. A116-117

I can connect chapter concepts with the contributions of scientists.

Anticipatory Set:
Have students scan the chapter. Guide them in identifying the lesson titles and then to outline the article.

Instruction and Strategies:

- Read as a class pages A116-117.
- Students will take notes as teacher discusses and lectures.
- Teacher will ask comprehension questions throughout the lesson.
- Have students copy and answer the Think About It questions on p. A116.
- Muscle Model: How does the biceps muscle work? p. A117

Formative Assessment:
Students will complete the workbook pages from each lesson.
What Do the Skeletal and Muscular Systems Work? Workbook p. WB65
How Do the Respiratory and Circulatory Systems Work? Workbook p. WB70
How Do the Nervous and Digestive Systems Work? Workbook p. WB75

Closure:
Students will share with the rest of the class their understanding of human body systems.

Independent Practice:
Students will work independently to complete the workbook assessment pages for each lesson.

Resources:
Harcourt Science- 4th Grade
Harcourt Science Workbook
Pencil
Paper
2 boards
duct tape
scissors
long balloon
string

Accommodations:
Cooperative groups will consist of students of various levels so they can help each other.
If needed, there can be a small group of students on which the teacher focuses his/her attention.
Have ESL students learn new words by selecting words in the dictionary and using them in sentences.

Content: Science: A World of Living Things: Unit Review	**Grade:** 4th	**Timeline:** 45 minutes 10/012/15-16/15

Science Standard(s):

4.1.1 Observe that results of repeated scientific investigations are seldom exactly the same.
4.1.2 Form and support a hypothesis after collecting information by gathering specimens or observing an experiment.
4.1.3 Differentiate between evidence gathered through observations and inferences, and use the evidence to develop a line of reasoning.

4.2.1 Observe and describe how a source of energy is needed for all organisms to stay alive and grow.

4.2.3 Observe and describe how organisms depend on each other to survive, such as providing food for one another or assisting with seed dispersal.

4.2.6 Explain how in all environments, organisms are growing, dying and decaying, and new organisms are being produced by the old ones. (Examples: Draw and explain the life cycles of plants and animals, and human beings.

CCSS ELA Standards:

4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

4.RI.3 Explain events, procedures, ideas or concerts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

4.W.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.

Lesson Overview:	**Lesson Objective(s):**
In this lesson, students will be able to recognize the basic structural differences among living things enable scientists to classify them. Adaptations are structures and behaviors that help living things meet their basic needs. Human body systems show the scale and structure of cells, tissues, organs, and systems.	In this lesson, students will be able to • Explain that cells are the building blocks of all living things including plants, animals, and fungi. • Explain that animals have adaptations to help them meet their basic needs. Such as bird beaks and body coverings. • Explain that Plants have adaptations to help them meet their basic needs. Such as plant structures- roots, stems, and leaves. • Explain that organs interact to help the body move and function.
Vocabulary: Cells, cell membrane, cytoplasm, nucleus, cell wall, chloroplast, microorganism, vertebrate, invertebrate, arthropod, embryo, flower, fruit, fungi, hyphae, spore, mold, environment, climate, oxygen, shelter, metamorphosis, adaptation, camouflage, mimicry, instinct, migration, hibernation, carbon dioxide, nutrient, photosynthesis,	**Focus Question(s):** • How do organisms rely on each other to survive? • What sources of energy are needed for organisms to thrive? • How do the life cycles of various organisms benefit the ecosystem? • How does studying cycles help us understand actual processes?

dormancy, transpiration, taproot, fibrous root, germinate, stamen, pistil, pollination, spore, tuber, tissue, organ, cardiac muscle, smooth muscle, striated muscle, lungs, capillary, heart, artery, vein, brain, neuron, nerve, spinal cord, esophagus, stomach, small intestine, large intestine	

Description of Lesson (including instructional strategies):
Day 1: 10/12/15 Chapter 1: Living Things
I can explain that cells are the basic building blocks of all living things.

Anticipatory Set:
Teacher will explain to students that they will be reviewing the chapter on living things. Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Cells are the building blocks of all living things including plants, animals, and fungi.

- Teacher will lead a whole class discussion; ask the class, what are living things? (All living things are made up of cells.)
- Preview the vocabulary terms on p. A2
- Teacher will review the comprehension questions with the students.
- Writing Link: Prompt students to think about discovering a new simple animal. Write a story about a day in its life. In the story tell how the animal moves, gets food, and supports its body.

Description of Lesson (including instructional strategies):
Day 2: 10/13/15 Chapter 2: Animal Growth and Adaptations
I can explain that animals have adaptations to help them meet their basic needs.

Anticipatory Set:
Teacher will explain to students that they will be reviewing the chapter on animal growth and adaptations. Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Animals have adaptations to help them meet their basic needs. These include body structures such as bird beaks and body coverings, and behaviors such as migration and hibernation.

- Teacher will lead a whole class discussion; ask the class, what are animal growth and adaptations? (Animals have adaptations that help them meet their basic needs.)
- Preview the vocabulary terms on p. A36
- Teacher will review the comprehension questions with the students.

- Writing Link: Suppose you are an animal that migrates in the spring and fall. Tell what kind of animal you are, where you live in the summer, and where you spend the winter.

Description of Lesson (including instructional strategies):
Day 3: 10/14/15 Chapter 3: Plant Growth and Adaptations
I can explain that plants have adaptations to help them meet their basic needs.

Anticipatory Set:
Teacher will explain to students that they will be reviewing the chapter on plant growth and adaptations. Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Plants have adaptations to help them meet their basic needs. These include important plant structures-roots, stems, and leaves.

- Teacher will lead a whole class discussion; ask the class, what are animal growth and adaptations? (Animals have adaptations that help them meet their basic needs.)
- Preview the vocabulary terms on p. A68
- Teacher will review the comprehension questions with the students.
- Writing Link: Compare ways that plants live in the wild and in the home. Describe how plants in both places meet their needs. In what ways do they meet their needs differently?

Description of Lesson (including instructional strategies):
Day 4: 10/15/15 Chapter 4: Human Body Systems
I can explain how the organ systems interact to help the body move and function.

Anticipatory Set:
Teacher will explain to students that they will be reviewing the chapter on human body systems. Have students scan the chapter. Guide them in identifying the lesson titles and major headings and use then to outline the chapter.

Instruction and Strategies:
Help students focus on the supporting facts and details for the main idea: Organ systems interact to help the body move and function. For example, the respiratory and circulatory systems work together to supply oxygen to body cells.

- Teacher will lead a whole class discussion; ask the class, what are animal growth and adaptations? (Animals have adaptations that help them meet their basic needs.)
- Preview the vocabulary terms on p. A94
- Teacher will review the comprehension questions with the students.
- Writing Link: Suppose you take a long hike. Write a story from the point of view of the muscles you would use. Describe for another classmate what it is like to walk and climb.

Description of Lesson (including instructional strategies):
Day 5: 10/16/15 Unit Test

Anticipatory Set:
Explain to students that they will be completing the Unit Test for A World of Living Things.

Instruction and Strategies:

- Administer the Unit Test to students.

Formative Assessment:
Students will complete the Unit Test.

Closure:
Students will share with the rest of the class their understanding of a world of living things.

Independent Practice:
Students will work independently to complete the Unit Test.

Resources:
Harcourt Science- 4th Grade
Pencil
Paper

Accommodations:
Cooperative groups will consist of students of various levels so they can help each other.
If needed, there can be a small group of students on which the teacher focuses his/her attention.
Have ESL students learn new words by selecting words in the dictionary and using them in sentences.