Wizards of Wright

Lesson: Helpful Nature

Background Info for Wizards:	This lesson is an introductory lesson for the Critical Technology – Biotechnology. A Biotechnology Engineer takes living organisms and improves on them to better human life. As we know, living things in nature supply our food and shelter. Seeing the connection between nature and human life is an important building block for students which leads to a greater understanding of Biotechnology in the future. Children understand going to stores for the things they need, and it is important for them to make the connection to where their "stuff" comes from. This lesson is designed to give students in grades K-2 a better understanding of this concept and foster an appreciation for the nature around them.
Materials:	10 baggies with "food and farm" items (1 bag for each group) - Each bag will contain 5 matching pairs (wheat and bread, eggs and chicken, dairy and cow, fruit and juice, and corn and a corn product). 11 containers with building materials (1 for each group and 1 for demonstration) - building materials include: brick, slate, nail, ceramic tile and wood Building Materials Matching Sheets (1 per student)
Lesson Time: ***45-50 minutes***	Introduction: 5 minutes Guided Lesson #1: 10 minutes Student Activity #1: 10 minutes Guided Lesson #2 and Student Activity #2: 15-20 minutes Conclusion: 5 minutes
Learning Targets:	Students will explore the living things around us that give us food and shelter. Students will match the animal or plant with the product found in the grocery store.

	Students will understand where our building materials come from.
Introduction for Students: 5 minutes	Over 6,000 years ago, which was a very long time ago, humans figured out that if they used things that they found in nature it helped make their lives easier. **Ask students:** What is nature? Briefly discuss that nature includes things like trees and plants and animals. Things that the Earth provides to us. **Ask students:** Can you name something specific that grows outside? Briefly discuss certain flowers or plants. You can also talk about lakes and waterfalls and bugs and reptiles. Nature includes all the living things we see outside, like plants and animals, but nature is also the non-living things like rocks, wood, and dirt. We get our food and shelter from Nature. Just like the people from a long time ago, using things we find in nature is helpful and makes our lives easier.
Guided Lesson #1: 10 minutes	Many years ago, humans figured out that sometimes they could take what they found in nature and make it even better. They found ways to make crops bigger, or stronger, or even healthier. They also found ways to make animals bigger, and stronger, and healthier. Improved crops and animals meant better food and animals that would do work for us. **Ask students:** Can you name some foods that grow on farms or in our gardens? - Allow time for a few answers. **Ask the students:** You did a great job naming foods that we find growing on farms. Can you name some animals we would find on a farm? - Allow time for a few answers. **Ask students:** Can you name some jobs that animals do for humans? Discuss examples like horses carry us, cows provide milk, or oxen that pull plows. **Ask the students:** Who goes to the grocery store?

	When you go with your family to the grocery store, what is one **food** that you buy? Briefly discuss that many things that we buy come from a product originally grown on a farm. For example: *Cereal* – cereal is a grain and grains are grown on farms. Cereal is made from things like wheat, rice, oats, even corn. *Candy* – candy is made from sugar, and sugar is made from a plant called sugar cane which is grown on a farm. And of course, we get things like *meat, milk, and eggs*. They all come from animals on the farm. (It's not necessary to discuss where meat comes from or how.) 😊 So much of what we eat, and drink, originally came from a farm. We will be doing an activity where we will figure out where our food comes from on the farm. We will learn which plant or animal the food started from.
Student Activity #1: 10 minutes	**(Students will be working in small groups for this activity. Groups should be just 2-3 students. Ask the teacher if the groups have already been created. If not, wait while he or she does this. Ask the teacher if the groups should stay where they are sitting, or if they can move to the floor.)** Once the students are settled, show them what they will be doing before you hand out the baggies. Explain that there are 10 items in each bag and with their partners they should match the items that are connected to each other. Show them an example that is wrong. **Say to the students:** For example, we won't match the egg to the cow, but I bet there's something in here that makes more sense to match to the egg. Give each group a baggie and give them a few minutes to place the matching items next to each other.

	This is a discovery exercise, so it is ok to guide them as you walk around the room. Ask questions to help guide them. For example: Is that a loaf of bread? Which of these plants do you think we use to make bread? Or… That looks like an egg, which animal do you think gives us eggs?  When all matches are made, go over the answers to ensure that each group has the correct pairs. The answers are: Wheat = Bread Eggs = Chicken Dairy product (milk, ice cream, butter, etc.…) = Cow Fruit = Juice Corn = Corn Product (nachos, tacos, etc.…) Ask each group to make sure all 10 items are back in the bag before you collect them. These items are small, so it would be best to quickly check them as you collect the bag. If they've been working on the floor, have students go back to their seats.
Guided Lesson #2 and Student Activity #2: 15-20 minutes	We have learned that nature helps us with food, but nature also gives us shelter. **Ask the students:** What do you think about when you hear the word shelter? - Allow time for a few answers. (If needed, steer them towards "house" or "place to live,".) **Say to the students:** Those were good examples of shelters. When a shelter is built, special materials are needed. Today, we are going to learn about where different building materials come from. **(Hold up a worksheet that they will be using.)** **Say to the students:** When you get a worksheet, you will see pictures of things found in nature on one side and pictures of building materials on the other side.

	Explain to the students: You will see pictures on the left side and right side of the worksheet. Let me tell you what they are. (Go ahead and read through the name of each picture.) **Say to the students:** Your job will be to draw lines to match the building material (on one side) with the natural material that it is made from (on the other side). Remember: Building materials are items that we use to build houses and buildings. Natural items are the objects found in nature that we use to make the building materials. **Say to the students:** With your worksheet, you will receive a container of some building materials (or things that we use to build with). Let's go through these building materials together! **Show students what they will find in the container.** As you go through the building materials, hold them up and show them to the class. **Pass out one container to each group/table of students.** Tell them to go ahead and look through them. (Give the students a few moments to touch and look at each material). Review the materials again. Have someone in each group hold their building material up as you do the same, to reinsure understanding. They will be Brick, plywood, ceramic tile, nail, and slate. **Pass out a worksheet to each student. Explain to them that you will be completing the sheet together. Tell them to get out a pencil.** **Say to the students:** Let's start with the first building material. **Hold up the small brick replica**. What is this item? (Wait until you get the answer brick). What do we build from bricks? (Give the students time to answer houses or buildings.) Bricks are strong and have been used to build houses for thousands of years. Who can tell me about their guess for items from nature we use to make bricks? (The correct answer is mud and straw. Give the students some time to get the answer correct). **Please draw a line** between the picture of bricks to the picture of mud and straw. Bricks are made by mixing mud with straw into a rectangle and then drying it in an oven or in the sun. **Say to the students:** This is our next item. **Hold up the nail.** What building material is this? (Give the students a moment to answer

	nail.) Why are nails important when building? (Give the students a moment to think and answer that they are used to hold things together.) Do you know which natural item we use to make nails? (It may take a moment for the students to answer metal or in this case iron which is a type of metal.) **Please draw a line** between the picture of the nail and the picture of metal. **Say to the students:** This is our next building material. **Hold up the piece of plywood.** What is this called? (Give the students a moment to answer wood.) What can we build with wood? (Give the students a moment to answer- we use wood to build roofs and walls.) Where do we get wood for building? (The students should answer with trees.) There are scientists called Forest Rangers that make sure that humans plant a few trees for each one that we chop down for building. **Please draw a line** between the picture of wood and the picture of trees. **Say to the students:** This is our next building material. **Hold up the ceramic tile.** Has anyone seen one of these in a house or a building? (Give the students a moment, if they cannot figure it out, it is ok to say that it is a ceramic tile. We normally see them in bathrooms and kitchens on floors, or on counters or walls.) Ceramic tiles are strong, they dry off quickly, and they are easy to clean. Who wants to guess what they are made of? (There are only 2 pictures left, so you are waiting for the answer clay.) Did you know that clay is a very thick and wet type of soil (dirt). It is shaped into squares or rectangles then heated up in an oven. **Please draw a line** between the picture of clay and the picture of ceramic tile. **Say to the students:** We have one item left and one picture to match it with. Who can tell me what that last picture is? (Wait for the answer of stone or rock.) **Hold up the piece of slate.** This kind of stone is called slate. Slate is used for roofs, countertops, and floors. Tell me some things that you notice about the slate? (Call on 2-3 students to answer this question. You are waiting for descriptive answers like smooth, rough, hard, or brown.)

	<u>Now draw a line</u> between the picture of stone and the picture of slate. Great job everyone! Now we can see how nature gives us all these wonderful items to build with, so that humans can stay safe and warm.
Conclusion: 5 minutes	Ensure understanding of the lesson by asking the following questions: **Say to the students:** Who can tell me something that they learned today? Now let's see who can answer these questions for me. **What is nature?** Answers should include some of the information: Nature is the living things like plants and animals that share our world, but nature is also the non-living things like rocks, metal, and dirt. **Where does our food come from?** Answers should consist of words like farm, animals, or plants. **What are some materials that we use to build houses and buildings?** Answers should include some of the building materials that we discussed. They may even mention some extra building materials! That is ok! Remind students… - Nature is important to human beings because it gives us food and shelter. - We started using nature for food and shelter many years ago. - Humans figured out that they could slowly change the behavior of plants and animals. - They did this by planting only the seeds of plants that gave them the best food. - This meant that humans would have healthier food and have animals that would do work for us. - It is just amazing how helpful Nature really is!

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