

Characteristics of a Tarantula

An Elementary Science Lesson Plan Designed For Group Inquiry Based On The 5E Inquiry Model

GRADE LEVEL: 2nd Grade

SCIENCE CONCEPT: This lesson is aimed at helping students understand the different characteristics and the different body parts of a tarantula. This lesson also provides students to become familiar with the characteristics of a rose haired tarantula. By the end of this lesson the students should be able to label the different body parts of a tarantula and describe what the functions of those body parts are. By showing their knowledge of what they have learned, the students will complete a tarantula model and complete the worksheets successfully given at the end of the lesson.

CALIFORNIA SCIENCE CONTENT STANDARDS:

2. Plants and animals have predictable cycles. As a basis for understanding this concept:

- a) Students know that organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another.

- c) Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.

- d) Students know there is variation among individuals of one kind within a population.

LEARNING OBJECTIVES: Students will understand and be able to identify different characteristics and body parts of a rose hair tarantula by completing their own model of a rose hair tarantula and successfully completing the given worksheets.

EVALUATION IDEAS:

1. Formative: Observation during students work, teacher and students asking questions throughout the lesson, and peer assessment.

2. Summative: Students will give an oral description of body parts of a tarantula and what each body part does on the student's tarantula model. "The Body Parts of a Tarantula" (Enchanted Learning) worksheet and the "Spider Crossword" (DLTK) puzzle.

CONCEPTUAL BACKGROUND:

Tarantulas are part of a group called arachnids. There are about 900 different species of tarantulas. Tarantulas come in many different colors allowing them to adjust easily to the environment that they live in. They can be found in South and West parts of the United States, Central America and South America (Chile and Argentina). Tarantulas hunt primarily in trees but others hunt on or near the ground. Tarantulas mainly eat insects using ambush as their primary method of prey capture. Tarantulas have two fangs in the front of their mouths that they use inject venom into their prey killing them. Tarantulas are poisonous so you must be careful.

Tarantulas have eight eyes and eight legs. Tarantulas rely on their exoskeleton for muscular support. Their bodies consist of two main parts, the head and the body, also known as the prosoma and the opisthosoma. The waist, also known as the pedicel, connects the head and the abdomen of the tarantula. Tarantulas also have spinnerets that are located on the end of their body. Spinnerets produce silk that the tarantulas make their webs out of. They also hold their eggs in the silk. Tarantulas can reproduce hundreds to sometimes thousands of eggs. When the spiders are hatched they are called spiderlings.

Rose hair tarantula lives in the desert and scrub regions in Chile and Argentina. The rose hair tarantula purpose is to be a consumer. It eats other animals and insects in order to gain energy. Rose hair tarantulas reach adult size around 3-4 years old. They are dark brown to black but covered with a reddish-orange to pink hairs all over their body. The males have longer legs and are fuzzier than the females. The females remain stocky and bulky. They have exoskeletons and a mound on top of their body that contains their 8 eyes. They live solitary lives and fend for themselves. They are nocturnal and like to live in moist and cool burrows. They feed during the night on insects and sometimes pinkie mice. They live in warm weather from 70-80 degrees and 75-80% humidity.

Vocabulary:

Abdomen: the belly, it contains the guts, heart, reproductive organs and the silk glands.

Arachnids: animals that have an exoskeleton, a two-part segmented body, and 8 jointed legs.

Eggs: produced by the female tarantula carrying a spiderling.

Eyes: eight tiny eyes that can only detect light and dark. They are located on the top of the tarantula's head.

Exoskeleton: external covering of the tarantula keeping the body safe.

Fangs: used to inject their prey with poison each tarantula has two.

Head: also called prosoma. It contains the brains, jaws, eyes, stomach, and leg attachments.

Insects: tarantula's prey or food.

Jaws: located below the eyes. The jaws are tipped with fangs that can inject poison.

Legs: have eight legs. Each leg has little tips at the end of them. If one breaks off it will grow back.

Palps: two sensory feelers used to taste food.

Poisonous: containing poison, harmful, and dangerous.

Rose Hair Tarantula: The Chilean rose hair tarantula's native habitat is the desert regions of Chile. It is a colorful, fairly large, very docile and hardy arachnid. Its colors can range from gray, to pink, to a reddish brown color. The spider will grow to about a five to six inch leg span. It has become one of the most common and popular pet spiders.

Silk: used to make webs and produced in the tarantula's abdomen.

Spiderling: baby tarantula.

Spinnerets: where the spider's silk is released. They are located at the tip of the abdomen.

Venom: the poisonous fluid held in the tarantula's fangs.

Waist: the tarantula's waist also known as pedicel. It connects the head and the abdomen.

Web: made out of the silk produced by the tarantulas.

LESSON IMPLEMENTATION PLAN: This lesson is designed to have students work individually. Students will compare and contrast each other's work throughout the lesson.

ENGAGE – I will start off the lesson by playing the “Who am I?” game. I will start out by giving the students clues that have to do with a tarantula (I like to live in the desert. I eat insects and some times small mice. I come in many

different colors. I have 8 legs and 8 eyes. Who am I?) Once they guessed correctly, I will bring out the tank that has the real rose hair tarantula in it. We will talk about the type of tarantula he/she is and the different types of tarantulas there are. I will also then place dead models of tarantulas in the middle of the group's desks. I will have the students observe the pictures first and then I'll ask the class, "What do you see on your tarantula?" The student's will first discuss with the people at their table about their tarantula and then we will come back as a class and write down what they see on the board. Next, I will have them take out a piece of paper and have them draw their own tarantula.

EXPLORE – Each student will draw their own picture of a tarantula by observing the model on their table. Once everyone has a colored picture of a tarantula they will explore the other pictures of tarantulas their classmates drew. The students will get a good feel of all the different types of tarantulas. They will compare them to their own pictures.

EXPLAIN – I will facilitate a discussion that talks about the different characteristics a tarantula has. As a class, we will discuss and label all the different body parts of a tarantula. The students will use their pictures that they drew to label the different body parts. We will also go through what the function and purpose of each body part is. Once I feel like they fully understand each body part and the functions of them, we will then construct and build our own Rose Hair tarantula out of paper plates and construction paper.

ELABORATE – While students are building their tarantulas I will elaborate on the different body parts. I will guide them on the Rose Hair tarantula making by having a live Rose Hair tarantula on display. The children will be able to look at the tarantula one at a time. The children will also be able to look back on their labeled tarantula drawings to help them complete their models.

EVALUATE –

(a) Summative – Students will give an oral description of the body parts of a tarantula and what they each do by using their tarantula models. Every spider should have a head, body (colored pink with a little brown), eight eyes, eight legs, spinnerets, fangs, and palps. The students will also successfully complete the given worksheets, "The Body Parts of a Tarantula" (Enchanted Learning) worksheet and the "Spider Crossword" (DLTK) puzzle.

(b) Formative - Observation, teacher and students asking questions throughout the lesson, and peer assessment.

DIFFERENTIATION PLANS:

Behavioral for Student A- Make sure to treat the student as an individual and provide the student with encouragement and positive feedback. Make sure to monitor the students behavior while the class is observing each others tarantula drawings. Use time-out sessions or breaks to cool off disruptive behavior.

Cognitive for Student B (ADHD)- Make sure to provide your students who have ADHD extra time to complete their tarantula drawings and tarantula worksheets. Providing the students with taped textbooks or note takers during class could be helpful. If further help is needed for understanding of the topic then provide the student with after class tutoring or volunteer support.

Cognitive for Student C (Special Needs)- Repeating oral instructions and providing the students with highlighted vocabulary words and definitions will help your special needs students greatly. Try to provide the students with immediate feedback on the students tarantula drawings and tarantula models. Also make the instructions of the activities concise and short so that the students don't get too overwhelmed and they have a better understanding of what is expected.

Affective for Student D (Emotional)- Make sure to provide a positive and encouraging classroom environment. Try to avoid confrontations and power struggles with the student. Make sure to provide time for relaxation between lessons. Using visually stimulating materials such as the tarantula photos for assignments will help the student concentrate on the work.

Language Demands for Students E, F, G (ELL)- Providing the ELL students with notes ahead of class will help the students follow along with your lesson easier. Make sure to highlight all the key words and concepts on the notes. Repeat instructions slowly and clearly. Have the students pair up with another student of equal level so that they can both help each other with the learning. At the end of the lesson have the students speak in their native language as they describe their tarantula models.

LIST OF MATERIALS (PER GROUP):

- 1 dead tarantula model
- White Paper
- Colored Pencils
- Markers

Tarantula Model (PER PERSON)

- 1 Small white circle
- 1 Paper plate
- 8 Brown strips of construction paper
- 8 googley eyes

- 4 small black pieces of construction paper (fangs and spinnerets)
- 2 brown rectangular strips of construction paper for the palps

DIRECTIONS OR SPECIAL INSTRUCTIONS:

“Who Am I?”

1. Tell the students that as a class you are going to play a game.
2. Explain to the students that you are an animal and they have to guess which animal you are. To help them guess who you are, you will provide the students with clues that you will write on the board.
3. After you have written down the first clue, ask the students, “Do you know who I am?”
4. Have the students raise their hands if they think they know who you are.
5. Call on a student to see what they come up with.
6. Repeat steps 3, 4 and 5 providing the students with a new clue after every guess till the students have guessed who you are.

Tarantula Model

1. Pre-cut the brown strips of construction paper (any length and width) and the small white circle.
2. Have the students color the small white circle brown and color the paper plate pink with a little of brown in it.
3. Once the students are finished coloring, have them glue the small circle to the paper plate leaving them with a head and a body.
4. Next glue 4 brown strips of construction paper to one side of the paper plate. Repeat on the other side leaving you with 8 legs total glued to the paper plates.
5. Have the students pick out 8 googly eyes and have them glue the eyes to the small circle.
6. Next have the students cut out and glue 2 fangs (2 small black pieces of construction paper) to the front of the small circle. Let the students cut out the size and shapes of their tarantulas fangs.
7. Have the students once again cut out their tarantulas palps. Make sure that they glue the palps on the outside of the fangs on the small circle.
8. Lastly, have the students cut out their tarantulas spinnerets. Have the students glue them to the bottom of their big circle.
9. They now should have completed their Rose Hair tarantulas.

Handling the Tarantula: Make sure that the students do not handle or touch the tarantula. The tarantula is fragile so in order to keep it safe and the children safe it is best if the children only observe the tarantula through its cage.