



# Animal Blood

## Audience

Activity is designed for 8 years old and up.

## Goal

Students will learn the differences of blood between insects, vertebrates and crustaceans.

## Objectives

- To compare the blood of different animals.
- To make observations.

## Conservation Message

All animals play vital roles in their ecosystems, even the icky ones. Slimy worms are important decomposers of organic matter. Creepy spiders are a valuable food source in the food web. It is important that we value all wildlife and find ways to educate ourselves to be better conservationists. Little changes in your life, can make a huge impact on the nature world. Try turning off the light when leaving a room, use a refillable water bottle instead of a disposable plastic one and shut off the water when you are brushing your teeth!

## Background Information

Many of us know that our blood is red, but do you ever wonder if other animals have different blood? The answer is yes!

Most insects like ants, bees and grasshoppers have clear blood. This is because the red blood color comes from tiny bits of metal in the blood. Insects do not have any metal in their blood; therefore, their blood appears clear.

It is not just insects that other oddly colored blood! Crustaceans are animals like lobsters, crabs and shrimp. If you were to examine the blood of a crustacean, you would see that it is blue! Their blood is blue because it contains copper particles. Other types of invertebrates, or animals with no backbone, that have blue blood includes Mollusks (clams, oysters and octopuses), Annelids (small worms) and Arachnids (spiders and scorpions).

So why is our blood red? We are vertebrates meaning we have a backbone and vertebrates have red blood because red blood cells have a pigment called hemoglobin. Hemoglobin has iron particles in it which, when combined with oxygen molecules, produces red blood.

### **Materials Needed**

- Blood Labels (provided)
- Observation Sheet (provided)
- 3 cups
- Large Bowl
- Corn Syrup
- Measuring Spoons
- Measuring Cups
- Cornstarch
- Red and Blue Food Coloring
- Cocoa powder
- Tape

### **Length of Activity**

30 minutes

### **Procedures**

- Attach the Blood Labels, one to each cup.
- In a large bowl mix,  $\frac{1}{4}$  cup of corn syrup and 2 teaspoons of water. Stir well.
- Divide this mixture evenly into the three labeled cups.
- Set the insect blood cup aside.
- Grab your vertebrate blood cup. Add 1 teaspoon of cornstarch, 4 drops of red food coloring and 2 pinches of cocoa powder. Stir well.
- Next is the Crustacean blood cup. Add a pinch of cornstarch and 4 drops of blue food coloring. Stir well.
- Now that all of your blood cups are made look at them side-by-side. Use the Observation Sheet to record your findings.



# Observations

**What are the differences between the blood types?**

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**Are the thicknesses different?**

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**Are there any similarities between the blood types?**

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