

Where Would a Vampire Bite You?

Name: _____

Date: _____

Student worksheet

1. Before the experiment

- a. Complete the sentence correctly by filling in the blanks with *capillary* or *artery*.

In the blood flow model, the wide straw represents a/an _____

and the narrow straw represents a/an _____.

- b. Do you think the capillary straw will empty faster, slower, or in about the same amount of time as the artery straw? Write your prediction below.

2. During the experiment

Record your results in the table below.

Experiment	Flow time [seconds]
Artery straw	
Capillary straw	

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3. After the experiment

Do this step if you are familiar with long division. Otherwise, skip this step and continue with the next step.

a. Calculate the *flow rate* from your results.

- In the beginning, you had 400 milliliters (mL) water in your cup.
- Divide the water volume (in milliliters) by the measured time (in seconds).
- Your result will be the water flow rate in milliliters per second (mL/s).

Flow rate for the artery straw: _____ mL/s

Flow rate for the capillary straw: _____ mL/s

b. Plot your results on the graph on the next page.

- Write a title for the vertical axis (y-axis). Don't forget to add the units to your y-axis title.
- Write number labels on the y-axis.
 - Look at your data. You want your largest value to be near the top of your graph. To do this, decide if your y-axis will increase by 1's, 2's, 5's, 10's or 20's.
 - Based on your decision, fill in the number labels next to the y-axis.
- Draw a bar that shows the measured time (or calculated flow rate) for the artery straw. Label the horizontal axis (x-axis) below it *artery straw*.
- Draw a bar that shows the measured time (or calculated flow rate) for the capillary straw. Label the horizontal axis (x-axis) below it *capillary straw*.

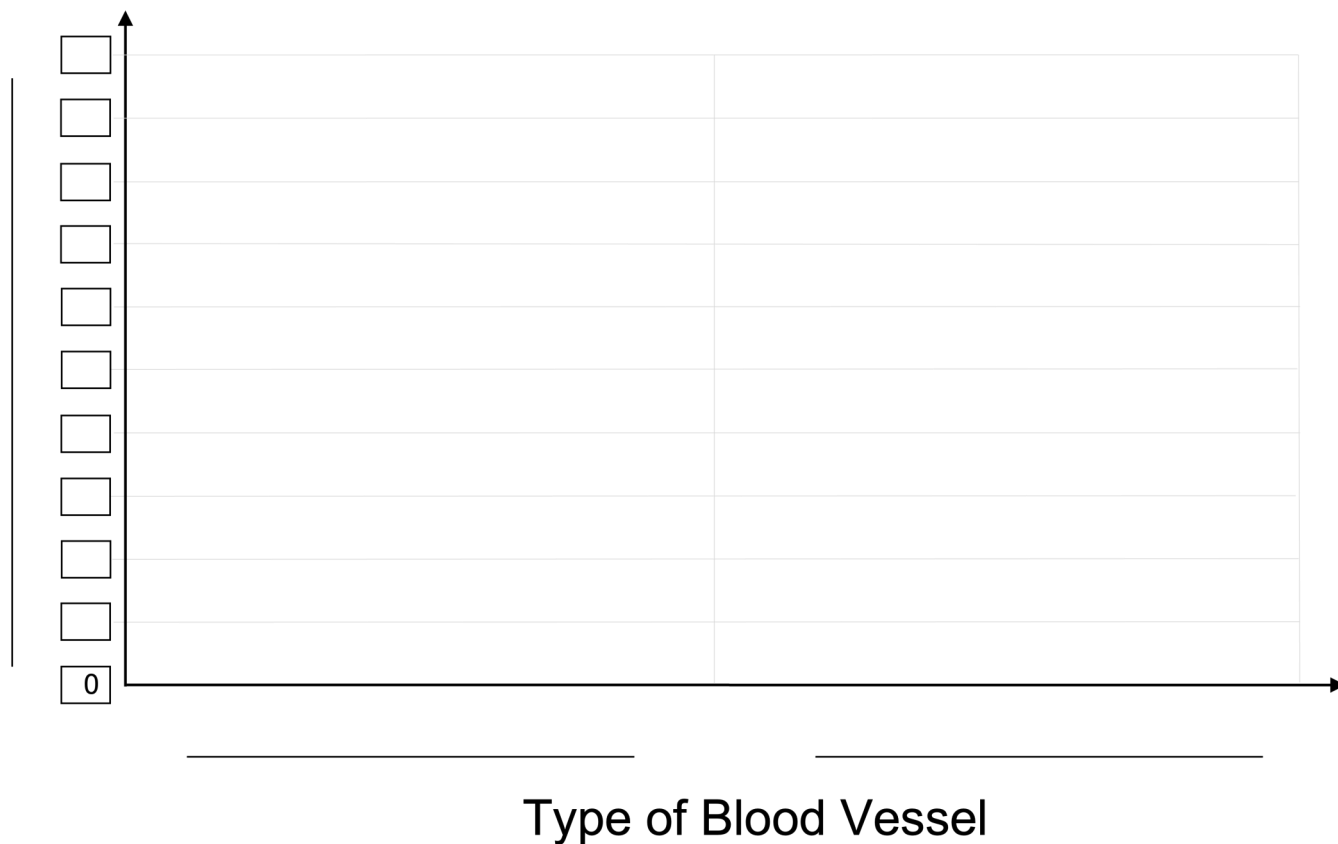
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Student worksheet

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Blood Flow in Different Types of Blood Vessels



Where Would a Vampire Bite You—Page 4

Student worksheet

Name: _____

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Word Bank

- | | | |
|---------------------|-------------------------|-------------------|
| • Artery | • Cardiovascular system | • Oxygen |
| • Blood circulation | • Circulatory system | • Narrow |
| • Blood flow | • Diameter | • Transport |
| • Blood vessel | • Heart | • Oxygen transfer |
| • Capillary | | • Wide |

- c. Did the capillary straw empty the cup faster, slower, or in about the same amount of time as the artery straw? What is the data that supports your answer?
- d. In your own words, explain why we have different-sized blood vessels. Use some of the words from the word bank when writing your answer.