

Making observations (write down what you see)

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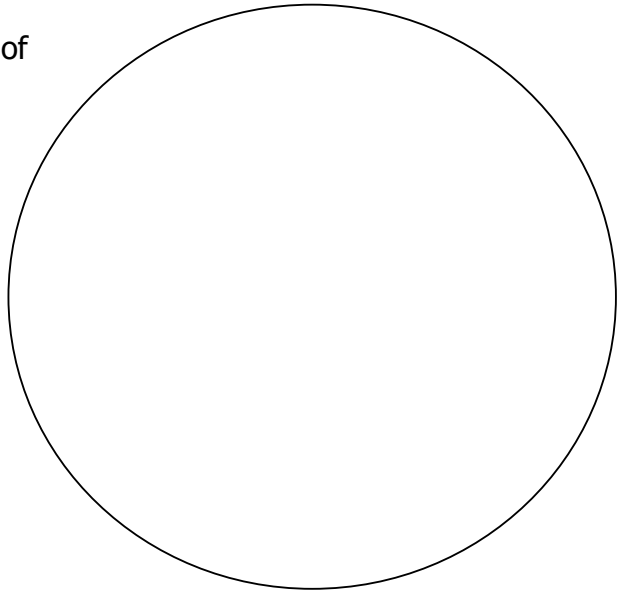


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Make a drawing of what you see under the microscope



Describe the shape(s) and size(s) of the worms you see.

If you see different sizes and shapes, why do you think there are differences?

What senses do you think a worm like *C. elegans* might have?

For one of the senses you listed above, describe how you could test to see if a worm had that sense.

**Preparing the experiment**

**Materials:**

- marker
- pipette
- Eppendorf tube
- plastic cup with distilled water

**Concentrating the worms - Procedure**

1. Write your initials on top of the Eppendorf tube.
2. Using the pipette, squeeze out the air in the bulb.
3. Put the pipette in the water. Suck up approximately 1ml of water (to the **L** on the side of the pipette) and gently squirt the water onto the plates with the worms.
4. Swirl the plate. Squeeze out the air in the pipette bulb, tilt the plate so the water pools on one side then put the tip of the pipette on that side. Gently suck the water out without touching the agar.
5. Put the water into the Eppendorf tube, close the lid, and place the tube with the worms on ice.

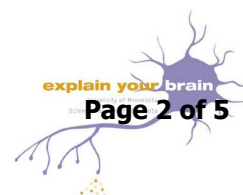
What do you think will happen to the worms when you put them on ice?

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Why do you think we would want to put the worms on ice?

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**Setting up the experimental plate**

Decide what substances you will test and list them here:

What will you use as a control? \_\_\_\_\_

Make a prediction! What do you think the worms will do with the substances you will test?

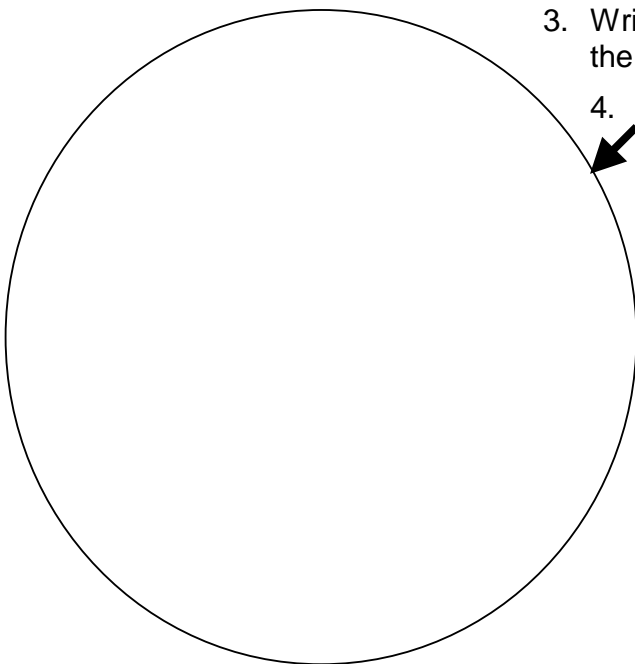
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**Materials:**

- large plate
- substances to test
- control

**Procedure:**

1. Make a diagram of what you plan to put on the plate and where each substance, the control, and the worms will go.
2. Write your initials and your partner's initials on the bottom side of the large plate.
3. Write the initials of the substances on the bottom of the plate of agar.
4. Create a diagram showing what you plan to put on the plate and where.
5. After making your diagram, place a small amount of each of your **substances** and your **control** onto the plate.



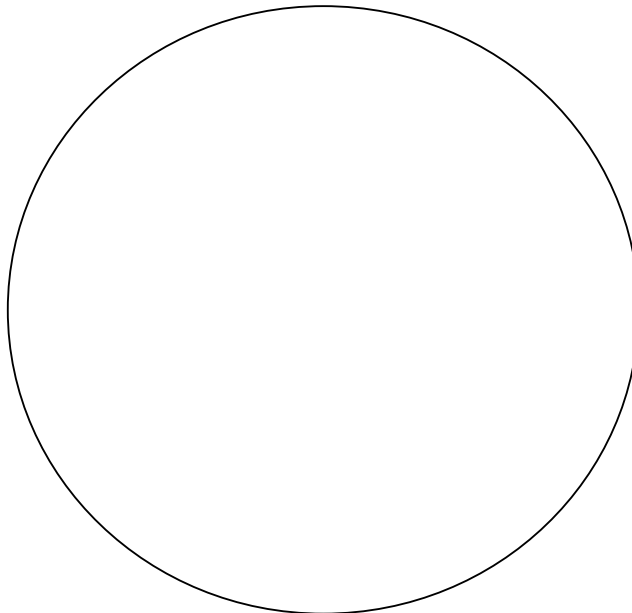
### Getting the worms out of the tube and onto the plate

#### Materials:

- pipette
- prepared large plate
- Eppendorf tube with worms at the bottom

#### Procedure:

- Look at the Eppendorf tube to see a small whitish thing at the bottom of the tube. Those are your worms!
- Use the pipette to suck off about **half the water off the top of the worms.**
- Squirt water into the lid of the small worm plate or into the waste basket.
- Use your pipette again to GENTLY suck off as much water as you can WITHOUT sucking up the worms.
- Once you have removed as much water as you can, use the pipette one more time to suck up the worms and place them onto your experimental plate.
- You will notice that the worms have a hard time going anywhere while they are still in the bubble of water. They are not strong enough to break through the water's surface tension, so you might gently blow on your plate to help evaporate the water.
- Draw another circle diagram of your plate, marking your test items, the control, where the worms started, and then **indicate where the worms moved toward or away from.**



**Data Collection**

How could you find out where the worms went? How could you quantify how many worms went where?

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What does a worm use its nervous system for?

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**Similarities and Differences of Vertebrates and Invertebrates**

