



Experiment 1 · Watching it grow

Student worksheet · 2 to 3 days · Ages 9-11 and middle school

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The question: How fast does a slime mold grow when it has food?

You will need

- a slime mold sclerotium
- a 9 cm Petri dish
- plain white unscented paper towel
- a water spray bottle
- rolled oats
- a ruler and a fine marker

My hypothesis, before I start

I think that...

Method

1. Lay the paper in the dish and moisten it without making a puddle.
2. Put the sclerotium in the middle, then three oat flakes 1 cm away from it.
3. Close the dish and keep it in the dark, at about 22 to 25 °C.
4. Every 4 hours during the day, trace the outline of the slime mold on the lid with the marker and measure its greatest length.
5. Record your measurements in the table, then draw the curve.

Tip: A sclerotium often takes 24 to 48 hours to wake up. Start on a Friday and begin measuring on Monday.

My observations

When	Measurement or observation

My conclusion

Was my hypothesis right? What does the experiment show?

Name _____ Class _____ Date _____



Experiment 2 · Food choice

Student worksheet · 3 to 4 days · Middle school

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The question: Does slime mold prefer some foods to others?

You will need

- an active slime mold
- a Petri dish lined with damp paper
- rolled oats
- a little baker's yeast
- a few grains of sugar
- a ruler

My hypothesis, before I start

I think that...

Method

1. Put a piece of slime mold in the middle of the dish.
2. Place the three foods at the same distance from it, about 3 cm, in three different directions.
3. Draw a diagram showing where each food is.
4. Check after 4, 8 and 24 hours. Which food is reached first? Which one gets covered?
5. Repeat the experiment with the foods in different places, to check that direction does not matter.

Tip: Only one thing should differ between the three directions: the food. The distance must be the same everywhere.

My observations

When	Measurement or observation

My conclusion

Was my hypothesis right? What does the experiment show?

Name _____ Class _____ Date _____



Experiment 3 · Light

Student worksheet · 1 to 2 days · Ages 9-11 and middle school

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The question: Does slime mold run away from light, or move toward it?

You will need

- an active slime mold
- two Petri dishes lined with damp paper
- black paper or aluminum foil
- a desk lamp (it must not heat the dish)
- rolled oats

My hypothesis, before I start

I think that...

Method

1. Set up two identical dishes, with a piece of slime mold in the middle of each.
2. Cover half of the first dish's lid with black paper. Keep the second dish completely in the dark: it is your control.
3. Shine the lamp on the first dish from at least 30 cm away, so it does not warm up.
4. Draw the slime mold after 2, 6 and 24 hours in each dish.
5. Compare the two dishes. Which way did the slime mold spread?

Tip: The control tells you whether the slime mold would have gone the same way without the light.

My observations

At the start	Halfway	At the end

My conclusion

Was my hypothesis right? What does the experiment show?

Name _____ Class _____ Date _____



Experiment 4 · The maze

Student worksheet · 4 to 6 days · Middle and high school

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The question: Can slime mold find the shortest path between two food sources?

You will need

- a printed maze template (blob-info.com)
- a Petri dish
- agar powder and distilled water
- a thin blade (handled by an adult)
- several pieces of active slime mold
- rolled oats

My hypothesis, before I start

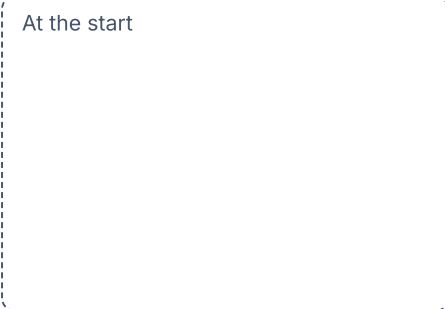
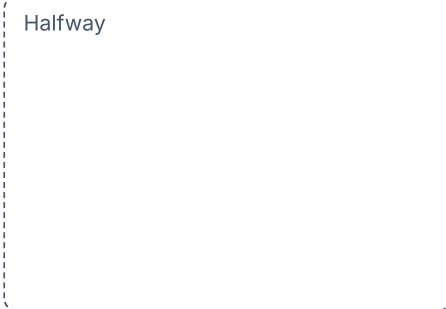
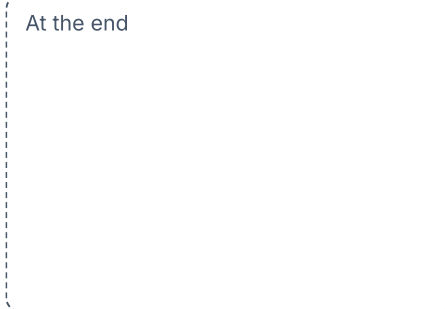
I think that...

Method

1. Pour a 3 to 4 mm layer of agar and let it set.
2. Put the dish on the template and remove the agar from the hatched areas. These are the walls.
3. Fill every corridor with pieces of slime mold, dead ends included. Wait 12 hours for them to merge.
4. Place two or three oat flakes on A and on B, at the same time.
5. Take a photo every hour for 8 to 12 hours. Which route is left at the end?

Tip: If you put the slime mold at the entrance and food at the exit, it will get there eventually, but you are not testing the shortest path. It is the most common mistake.

My observations

At the start	Halfway	At the end
		

My conclusion

Was my hypothesis right? What does the experiment show?

Name _____ Class _____ Date _____



Experiment 5 · Two slime molds merging

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Student worksheet · 2 to 3 days · High school

The question: Can two pieces of the same slime mold become a single organism again?

You will need

- an active slime mold
- two Petri dishes, then a third
- damp paper towel
- rolled oats
- a clean spatula or toothpick

My hypothesis, before I start

I think that...

Method

1. Cut two pieces of about 1 cm² from the same slime mold.
2. Let them grow for 24 hours in two separate dishes, with a few flakes.
3. Then place them 1 cm apart in a fresh dish.
4. Check every 2 hours. Do the two networks touch? What happens to the veins where they meet?
5. To go further, try again with two slime molds from different sources.

Tip: Two pieces of the same slime mold usually merge within a few hours. Slime molds from different strains do not always merge.

My observations

At the start

Halfway

At the end

My conclusion

Was my hypothesis right? What does the experiment show?

Name _____ Class _____ Date _____