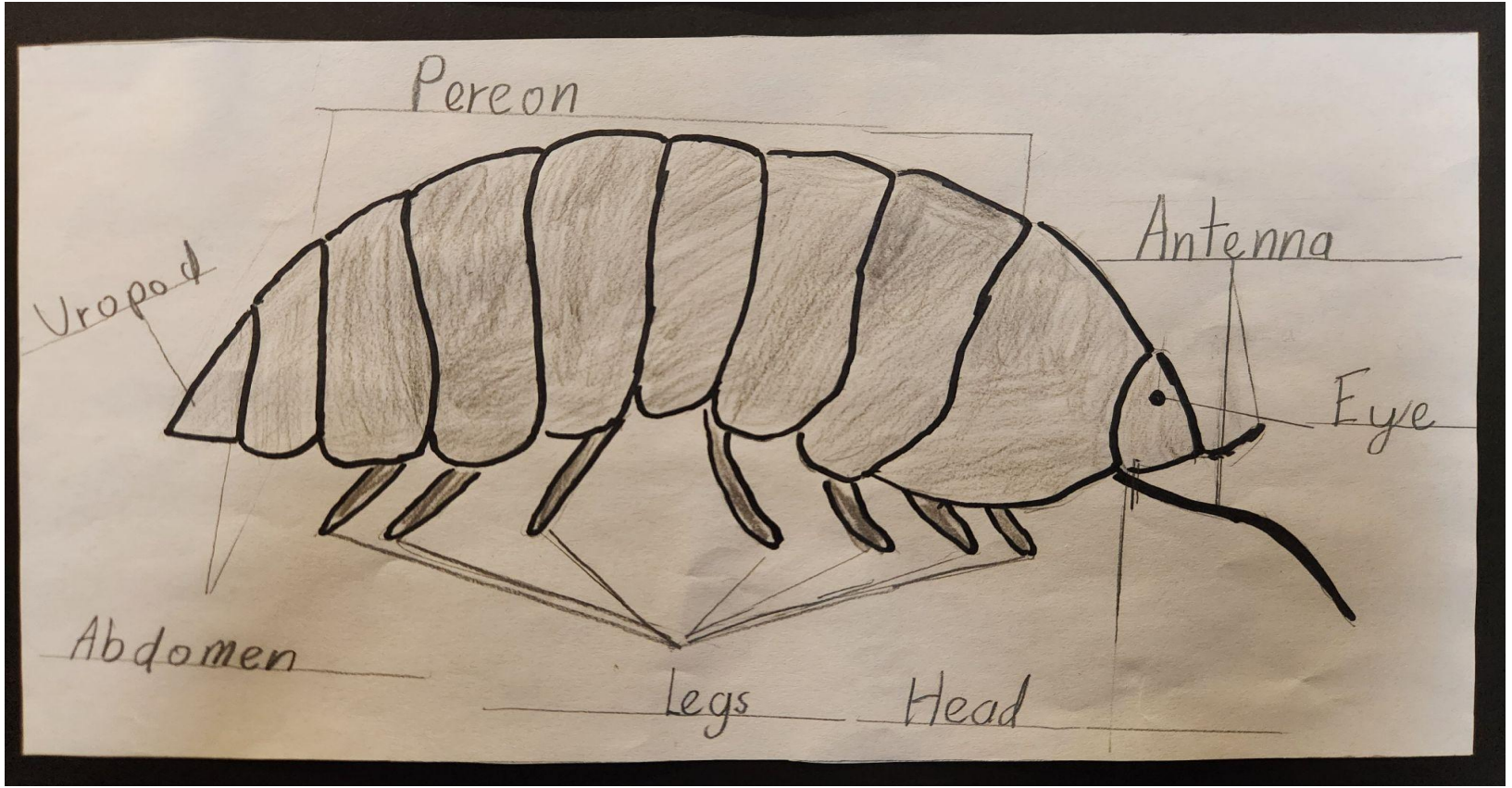
# Do Roly Polys Prefer Light or Dark?

# Problem

I like to look for and find roly polys in the garden. Because they are fun I want to know more about which environment is best for roly polys and to learn more about their preferences.

# Introduction


Pereon
Antenna
Uropod
Eye
Abdomen
Legs
Head

The scientific name of roly polys is *Armadillidiidae*. They have been given the nickname ‘roly poly’ because they are known for rolling into balls if they are threatened. They are also called pillbugs. Interestingly, they are not bugs! They are actually isopods which is a type of crustacean. That means they are related to shrimp and crayfish. They even have gills to breathe. Because they live on land they need a damp, wet environment to use their gills. Roly polys are not dangerous to humans. They are nocturnal and eat mostly decaying plants.

# Hypothesis

If the roly polys are given the choice between a dark or light environment then they will choose to be in the dark environment.

# Procedure

1. Get roly polys.
2. Find a plastic enclosure and fill with a small amount of clean soil and fallen leaves.
3. Split the enclosure into two parts, but make sure that the roly polys can still access both sides.
4. Put a small piece of food on both sides.
5. Cover one half of the enclosure with black paper and the other part will be left transparent.
6. Place the same amount of roly polys on each side.
7. Allow the roly polys to move to whichever side they prefer.
8. Observe for several days where the roly polys prefer to be by counting the number on each side of the box twice per day.

Note: The roly polys will be well taken care of and treated very gently, the counting will be done just by looking so as to not bother them. Some of them might not be able to be seen at every observation.

# Materials

- Roly polys
- Enclosure
- Soil
- Leaves
- Plant scraps
- Water
- Water dropper
- Black paper
- Small pieces of food (apple, carrot, kale)
- Scissors
- Tape

# Photos

Dark Side

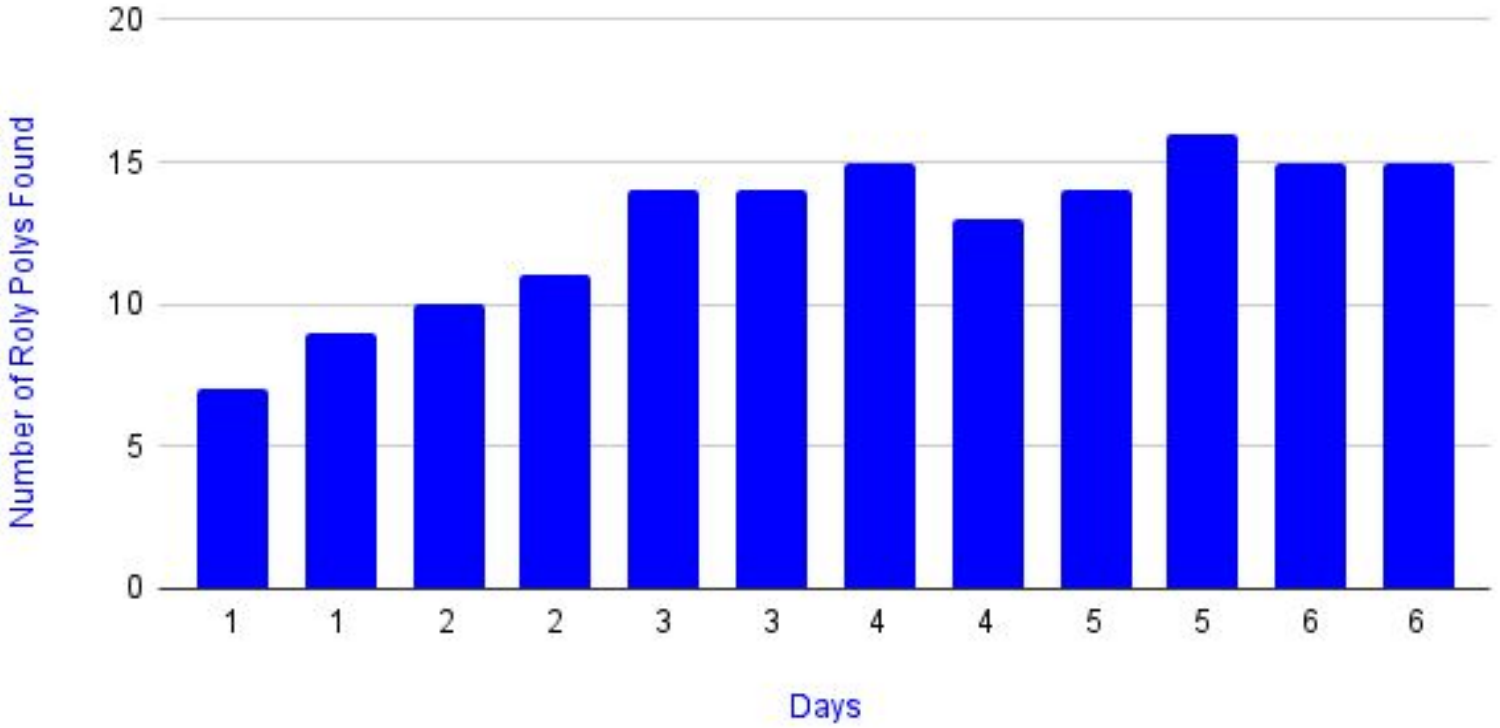
Light Side

# Data

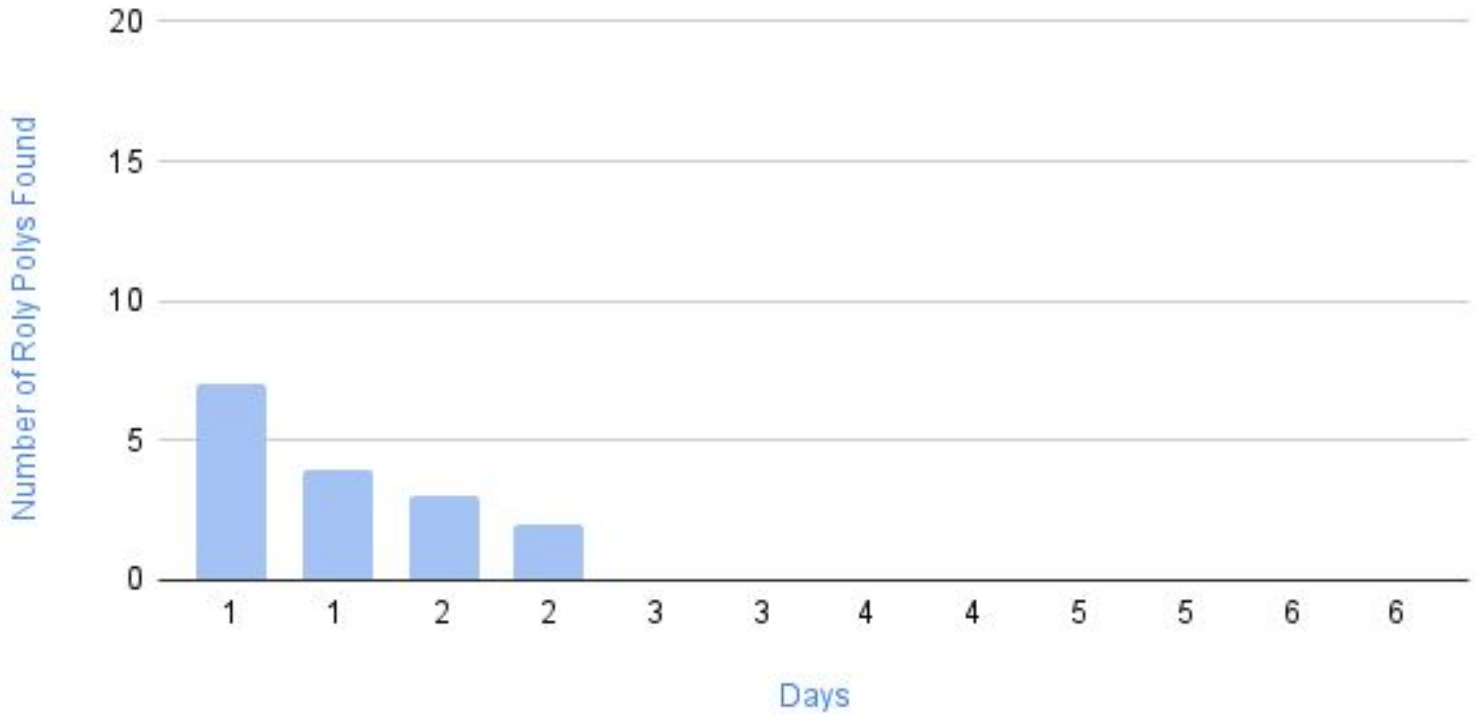
# Table of the number of roly polys found on each side of the enclosure

| Date | Dark Side | Light Side |
|---|---|---|
| 12-7 am | 7 | 7 |
| 12-7 pm | 9 | 4 |
| 12-8 am | 10 | 3 |
| 12-8 pm | 11 | 2 |
| 12-9 am | 14 | 0 |
| 12-9 pm | 14 | 0 |
| 12-10 am | 15 | 0 |
| 12-10 pm | 13 | 0 |
| 12-11 am | 14 | 0 |
| 12-11 pm | 16 | 0 |
| 12-12 am | 15 | 0 |
| 12-12 pm | 15 | 0 |

# Number of Roly Polys Found on the Dark Side of Enclosure over Time



# Number of Roly Polys Found on the Light Side of Enclosure over Time



# Results

When offered a choice between light and dark, roly polys almost always choose the dark. The hypothesis was confirmed. Roly polys prefer a dark environment. After just one day, not a single roly poly was found on the light side of the enclosure.

# Conclusion

Roly polys strongly prefer dark over light. This probably is because a darker environment is better for their breathing. The dark helps keep the soil in their environment damp. They need the moisture to survive and therefore prefer darkness.

# Works Cited

- "All About Pill Bugs." *BHC Conservancy*, 17 Jan. 2026, https://bhic.org/all-about-pill-bugs-conservancy-camps-new-hobby/.
- "Roly-Poly (Pill Bugs)." *Reconnect with Nature*, 17 Jan. 2026, https://www.reconnectwithnature.org/news-events/the-buzz/roly-poly-pill-bugs/.
- "Pill Bugs & Roly Poly Bugs." *Welcome Wildlife*, 17 Jan. 2026, https://www.welcomewildlife.com/in-your-yard-pill-bugs-roly-poly-bugs/

# Thank you!