



HOMESCHOOL SCIENCE EXPERIMENT

Testing the Effect of Different Mulches on Soil Temperature

Name: _____

Date: _____

Weather: _____



QUESTION

How do different mulches affect soil temperature?



HYPOTHESIS

Make a prediction about which mulch (if any) you think will keep the soil the coolest (or warmest) and why.



MATERIALS

- 5 identical containers or pots (at least 6 inches deep)
- Thermometer with a probe
- Soil (same type for all containers)
- Different mulches (see suggestions below)
- Watering can
- Marker and labels
- Sunny location (outdoors)

Mulch Suggestions (choose 4):

- Wood chips
- Grass clippings
- Straw
- Pine needles
- Leaves
- Bark mulch



EXPERIMENT PROCEDURE

1. Label your containers: Control (no mulch), and label the others with the names of the mulches you chose.
2. Fill each container with the same type of soil to the same level.
3. Water all containers evenly so the soil moisture is the same.
4. Add mulch to each container (except the control). Spread it evenly to a depth of about 2 inches.
5. Place all containers in a sunny spot where they will receive the same sunlight.
6. Using the thermometer probe, measure the soil temperature 2 inches below the surface in each container.
7. Record the temperature at the same time for 3 consecutive days.



CONTROL

The container with no mulch is your control. It helps you see how the mulches change the soil temperature compared to bare soil.



RESULTS – Soil Temperature (°F)

Record the soil temperature (2 inches deep) for each container at the same time each day.

Container / Mulch	Day 1 Time: ____	Day 2 Time: ____	Day 3 Time: ____	Average Temperature (°F)
Control (No Mulch)				
Wood Chips				
Straw				
Leaves				
(Your choice)				
(Your choice)				



CONCLUSION

What did you find out? Which mulch kept the soil the coolest? Which kept it the warmest? Explain why you think this happened.



★ **CHALLENGE:** Try measuring soil temperature at a different time of day. Does the pattern change?