

# What is Science?

## Characteristics of Science:

1. Observable
  - Scientific knowledge is obtained only through observation
2. Explained by natural laws, empirical evidence
  - MUST be made without reference to supernatural forces or beings
3. Testable
4. Conclusions are tentative
5. Falsifiable



Digger Wasps

# Scientific Method

1. Observations

2. Questions → How do females find their burrows?



# Scientific Method

1. Observations
2. Questions → How do females find their burrows?
3. Hypothesis → Answer the question
  - Must be a testable explanation

**Hypothesis:** females use visual cues to identify location of burrows.

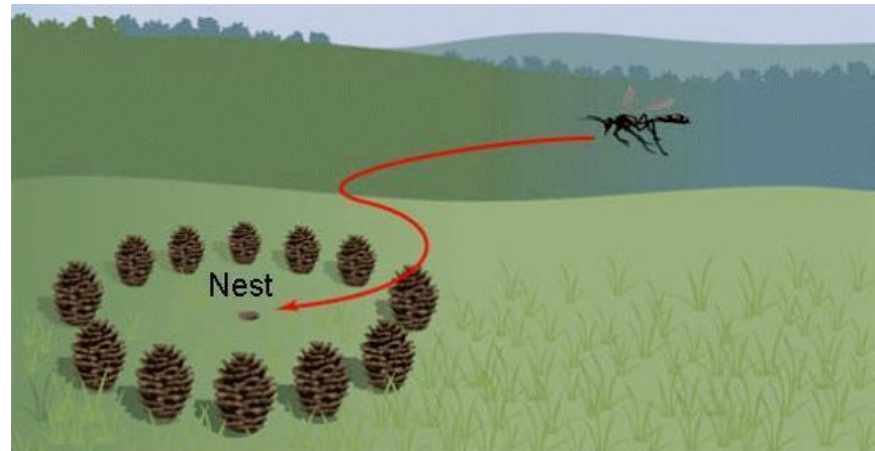
4. Prediction - statement of what you expect to see if your hypothesis is correct

**Prediction:** if females use visual cues to identify the location of burrows, then changing or removing the cues will cause females to be unable to find their burrows.

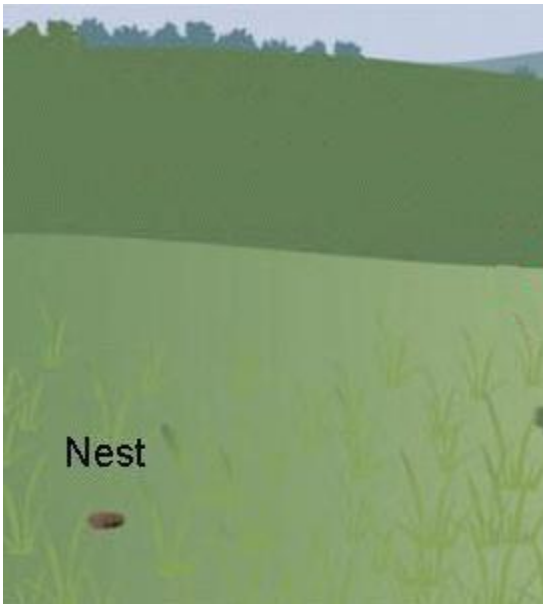
**Prediction 2:** if females use visual cues to identify the location of burrows, then moving the cues will cause females to look in the wrong location to find their burrows.

# Scientific Method

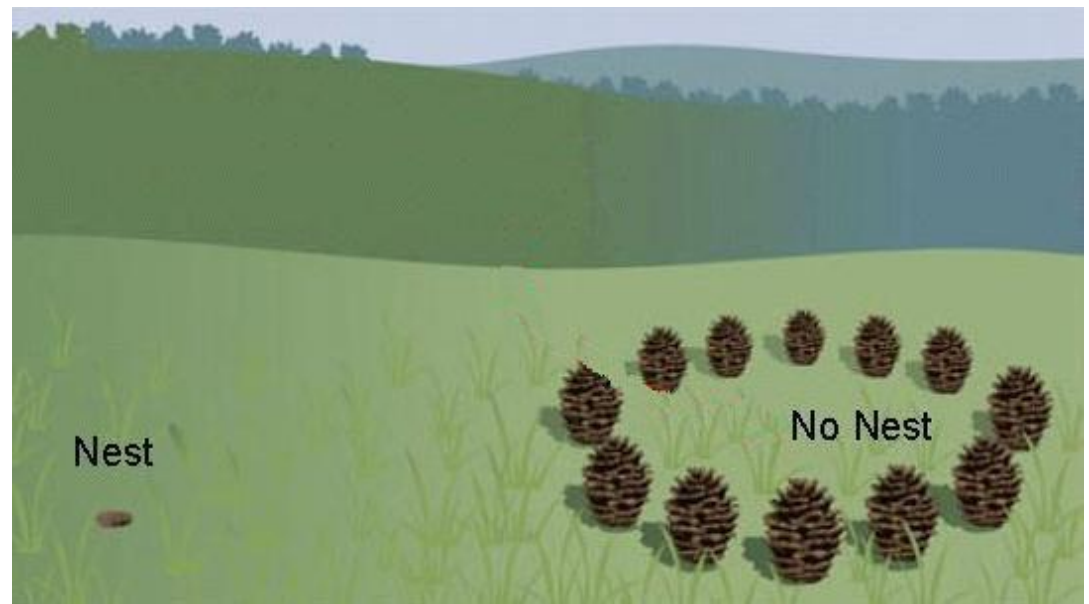
## 5. Tests & conclusions



Test 1



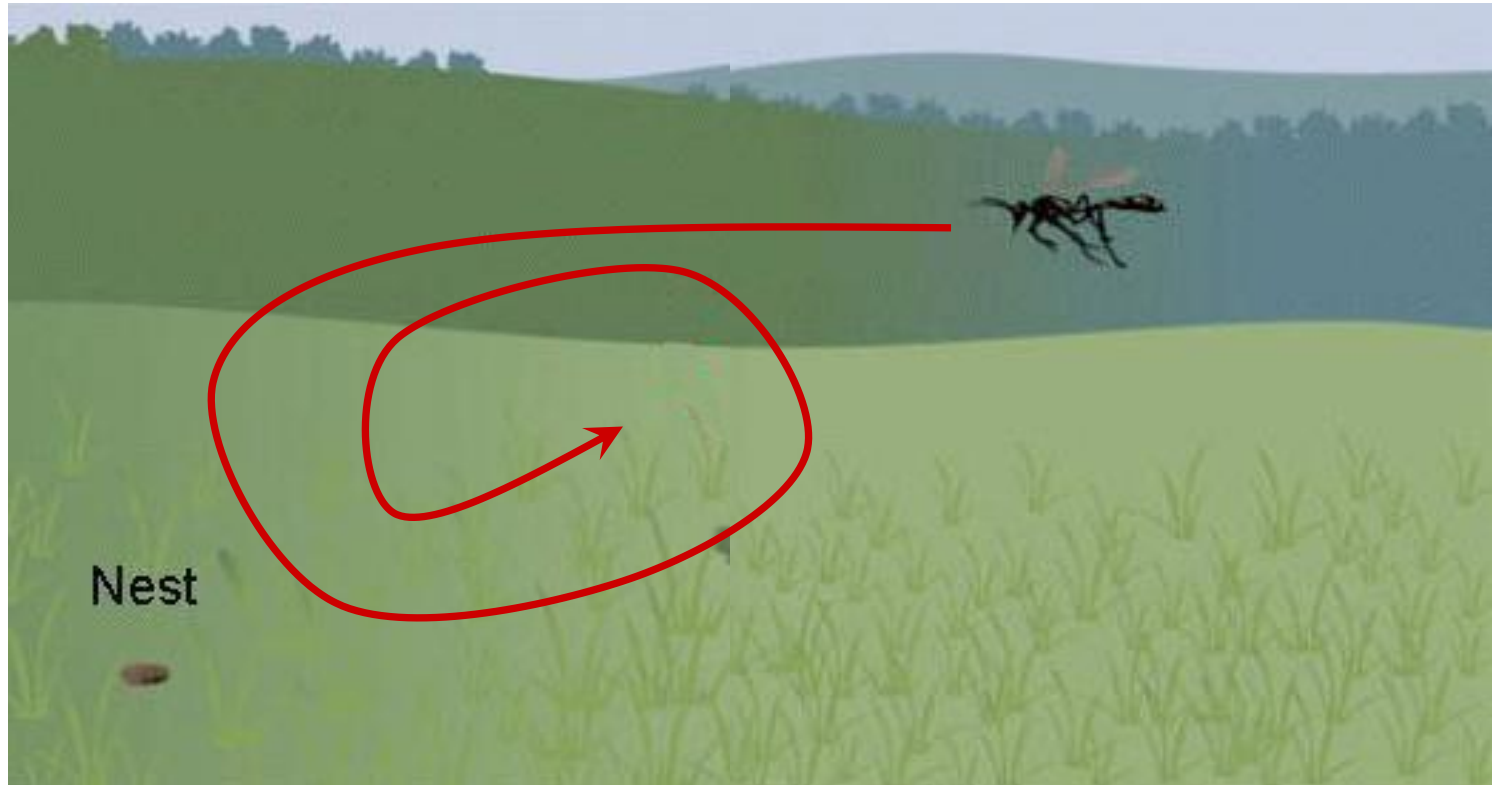
Test 2



# Results:

Test 1 = prediction 1 correct

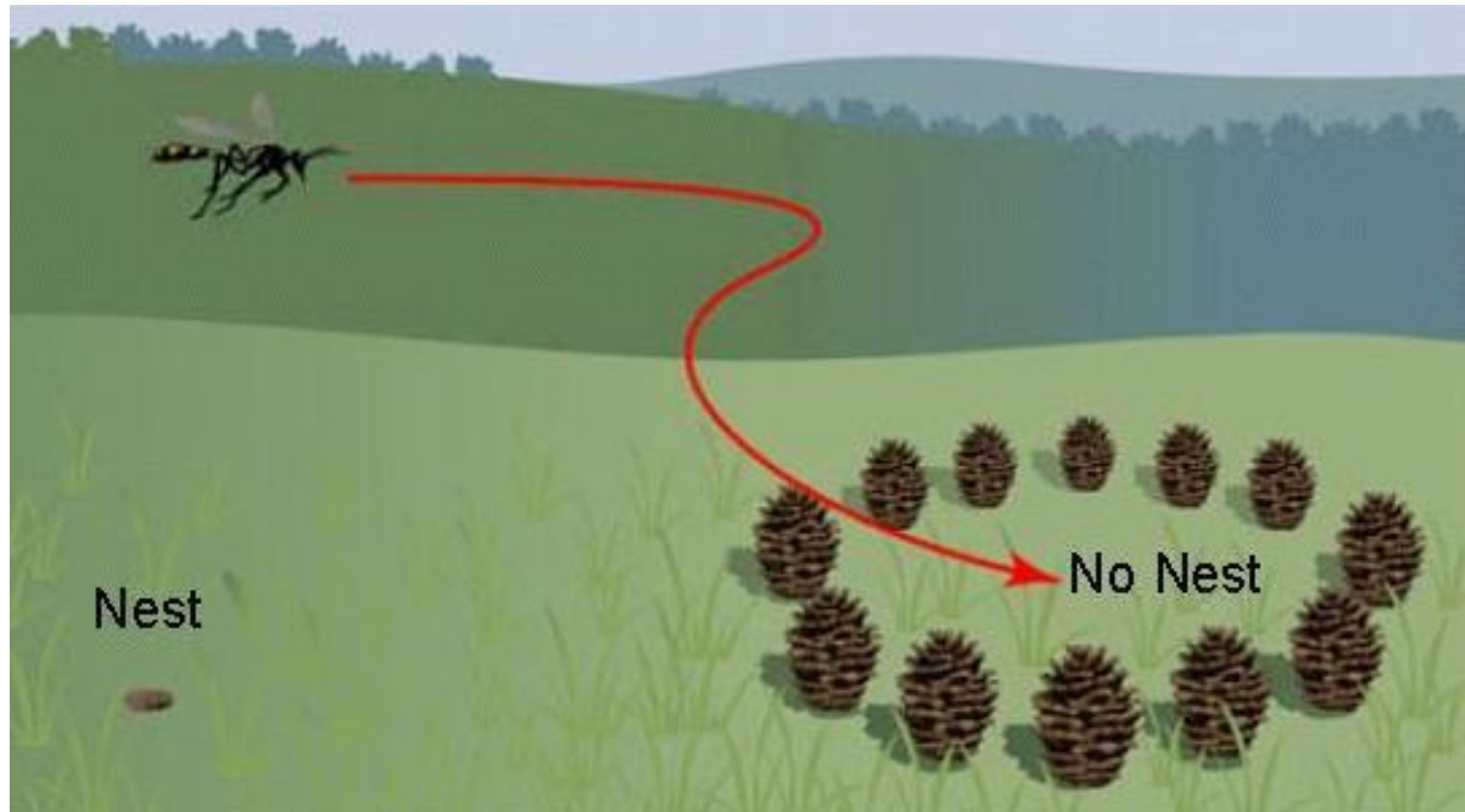
(changing or removing the cues will cause females to be unable to find their burrows)



# Results:

Test 2 = prediction 2 correct

(moving the cues will cause females to look in the wrong location)



Conclusion:

Predictions = correct

Hypothesis = supported

Data ***suggest*** that female digger wasps use visual cues to remember and relocate their burrows.

