

LESSON 5

ZOOM IN, ZOOM OUT

Investigate and draw an object in three scales:
magnified, life size, and distant

In this activity you will...

1. Record observations at three scales: close up, life size, and far away.
2. Use circles to show magnified views for the “zoom in.” In the zoomed-out view, you can include details such as growth forms, where the subject is, or a small map.
3. Use writing, drawing and numbers to record your observations.

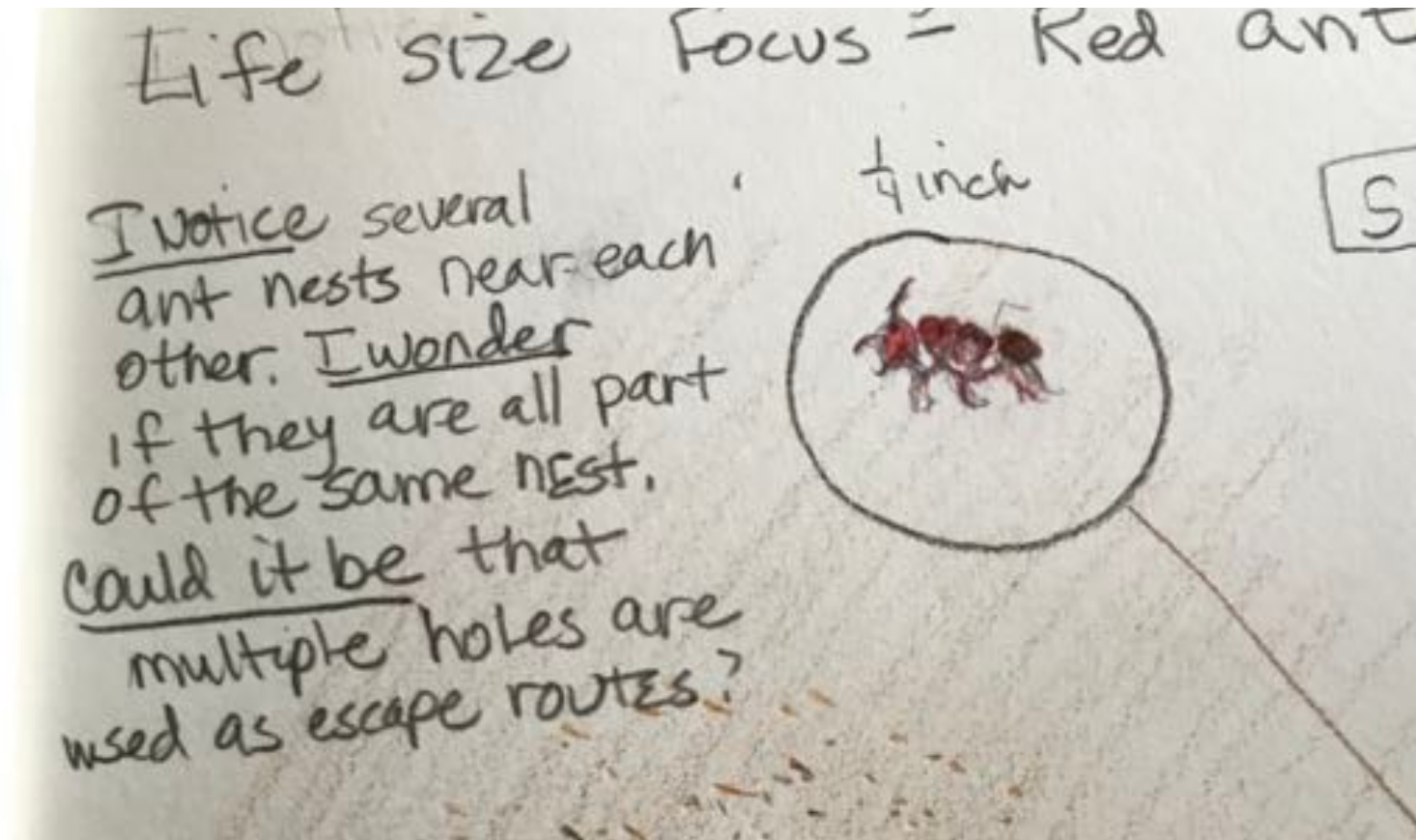
**There's a lot you can observe by changing your level of focus.

Always begin with Metadata

- Begin with your metadata
 - Date, Day, Time
 - Weather
 - Temperature
 - Wind Speed
 - Cloud Cover
 - Location
 - Place
 - Habitat

9 September 2020 Wednesday
Lockwood Valley, Chico Larson Way, shoulder of Road
Los Padres National Forest, sage brush / high desert 5200 ft
80.6° NNE 9mph wind - 0% cloud cover ☀

"Zoom IN Zoom OUT"



Life size: In the middle of your page, draw a view of your subject that is exactly life size

- I included the measurement of the ant.
- If it's bigger than your page, draw a part of it.
- Write your ABC's (I notice, I wonder, This reminds me of...)

I Notice

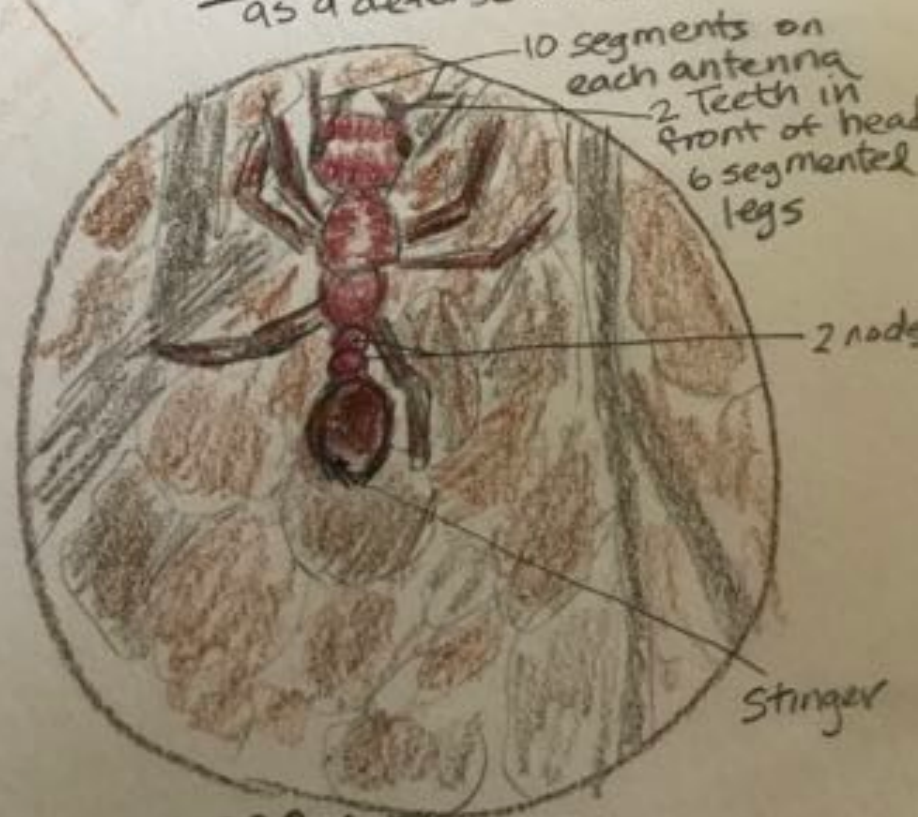
X Nest is Flat

* ANTS ARE AWARE of my presence +

* They move very fast

* Not many ants out. I wonder
IF MOST are underground?
Could it be because it's the
heat of the day?

I Notice ANT's head is square
I wonder if it bites or stings
as a defense or both?



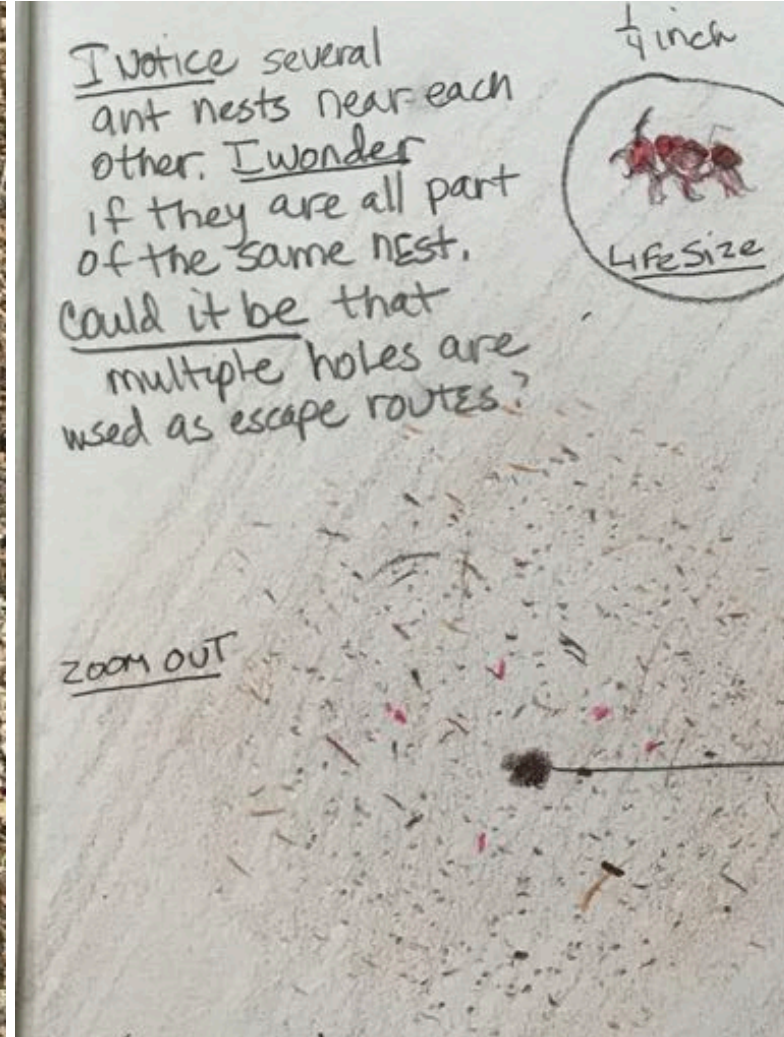
10,000 ANT
in a colony



Zoom In

- Choose some part of the subject that you find interesting and observe it in detail.
 - Use a hand lens or magnifying glass if you have one.
 - To show this view, draw a circle around that part of your drawing. Then draw a larger circle and draw a magnified view of the same area showing details that are too small to be shown in the life size picture.
 - Write your ABC's
 - **Note:** Because my subject was so small, I chose to draw the entire body, not just part of the subject.

Zoom Out



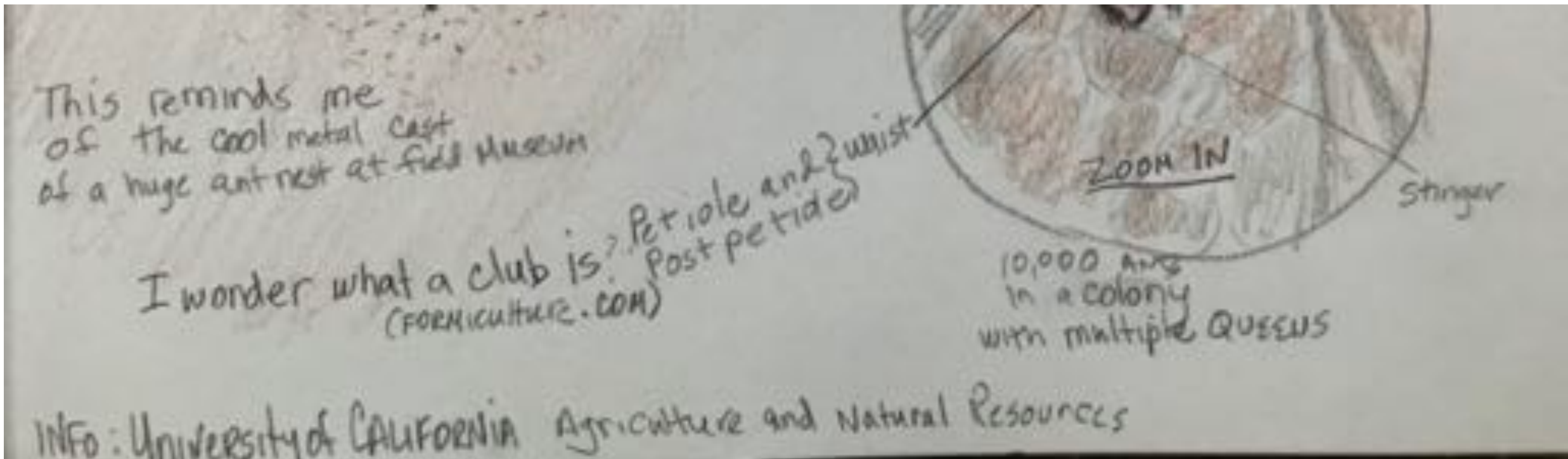
- Step back and make a final sketch, this time zoomed out to take in the whole subject and some of its environment.
- Write your ABC's
- At every point of view, use your ABC's, 123's and pictures.
- **Note:** I used my pencil as a measuring device to help me determine the size of the ant hill.

Could it be...

- Look at your “I wonder...” statements. Can you come up with some hypotheses for them?
 - Remember to make some suggestions for possible answers by using the sentence frame: “Could it be...”
- Try doing a little research after you finish your journal entry to see if you can get any more information about your subject.

Additional Research

- If you get information from the Internet, write your sources (where you found the information) .



9 September 2020 Wednesday
 Lockwood Valley, Chico Larson Way, shoulder of Road
 Los Padres National Forest, sage brush/high desert 5300 ft
 80.6° NNE 9mph wind - 0% cloud cover ☀

"Zoom IN / Zoom OUT"

ANT HILL RADIUS ~ 6-7 inches (scattered sand/rock)
 entrance ~ 1.5 cm

Life size Focus = Red ant

I notice several
 ant nests near each
 other. I wonder
 if they are all part
 of the same nest.
 Could it be that
 multiple holes are
 used as escape routes?



Southern Fire Ant

I notice
 * Nest is Flat
 * Ants are aware of my presence +
 * They move very fast
 * Not many ants out. I wonder
 if most are underground?
 Could it be because it's the
 heat of the day?

I notice Ant's head is square
 I wonder if it bites or stings
 as a defense or both?



Zoom OUT

radius
 6-7 inches

This reminds me
 of the cool metal cap
 of a huge ant nest at Field Museum

I wonder what a club is -
 Petiole and Gaster
 Post petiole
 (robertcattell.com)

10,000 ants
 in a colony
 with multiple Queens

Now it's time for you

- Make your journal entry using the instruction you just saw.
- Come back after you completed your page and answer the Reflection Questions that follow this slide.

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Los Padres National Forest, sage brush / high desert 5200 ft
80.6° NNE 9mph wind - 0% cloud cover ☀

"Zoom IN / Zoom OUT"

ANT HILL RADIUS ~ 4-7 inches (scattered sand/rock)
entrance ~ 1.5 cm

Life size Focus = Red ant

I notice several
ant nests near each
other. I wonder
if they are all part
of the same nest.
Could it be that
multiple holes are
used as escape routes?



Southern fire ANT

I notice
Nest is Flat
Ants are aware of my presence +
They move very fast
Not many ants out. I wonder
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Could it be because it's the
heat of the day?

I notice ant's head is square
I wonder if it bites or stings
is it defense or both?



Zoom OUT

radius
6-7 inches

This reminds me
of the cool metal cap
of a huge ant nest at Field Museum

I wonder what a club is.
P. r. ole. and 2. uncl.
Post petiole

10,000 ants
in a colony
with multiple Queens

Info: University of California Agriculture and Natural Resources

Time for Reflection

Remember to use Question/Answer Form

- Start thinking about what you learned from your three different perspectives:
1. What were you able to learn because you looked at your subject in three different ways?
 2. What did you see from your life size view?
 3. What did you see from your Zoomed-in view?
 4. What did you see from your Zoomed-out view?

Reflection Questions Based on NGSS Cross Cutting Concepts

Remember to answer them in Question/Answer Form.

- **Structure and Function**
 - What are some of the structures or parts you observed at the zoomed-in scale? At the life-size scale? At the zoomed-out scale?
- **Scale, proportion and quantity**
 - Are there structures or patterns of shapes you're seeing in the magnified view that are similar to structures you see in the distant view? How are they alike or different?
- **Cause and Effect**
 - Look at some of the unique features of the subject you focused on in your journal. What did you notice?

Last Step

- Order your answers in a meaningful way to put them into a paragraph
- Write your paragraph starting with an introductory sentence.
 - Then write the answers to your 7 questions in the order you chose.
 - Finish your paragraph with a closing sentence.
- Add Lesson 5 to your Table of Contents.



Tejon Ranch

CONSERVANCY

BYE FOR
NOW.
THANKS FOR
JOINING ME.