

Lesson 2.1: It's a zoo!

Recommendation: Break it up in 2 sessions

Objectives

In this lesson, students will:

- ❖ Present data in different a format
- ❖ Be able to explain why presenting data in a certain format can help make sense of it and make inferences

Agenda

1. Prerequisites	30 mins
2. Activities	
a. Your family	15 mins
b. Your habitat	10 mins
c. Your vertebrate category	10 mins
3. Practice	15 mins

Preparation

- Print out of Appendix A (1 for the class)
- Print out “Practicing Classification of data” (one for each student)
- Animal Flashcards like [Animals of All Kinds Flash Cards Cards](#) - by [School Zone Publishing Company Staff](#)(Author) [Animals Pocket Flash Cards](#) - by Trend Enterprises Inc or from <https://flashcardfox.com/download/farm-animals-flash-cards/>
- Post-its of different colors

Resources & Links

- [Animal Classification for Children](#) from FeeSchool <https://www.youtube.com/watch?v=mRidGna-V4E>

Alignment to CA CS Standards

Standards

- DA.8
- DA.9

Core Practices

- (Communication) Communicating About Computing

Credits:



1. Prerequisites



Explain to the students that today the classroom has decided to study a group of animals and that each student will receive a flash card with an animal they represent.

A. Vertebrates vs. invertebrates

If necessary, review the different kinds of animals that exist on Earth:

- If not done before this lesson, watch the video:
<https://www.youtube.com/watch?v=mRidGna-V4E>
- Ask questions to reflect on the video. Examples of questions are:
 - What are the main 2 categories all animals can be split into (Vertebrate, invertebrate)
 - Humans invertebrate or vertebrate animals?
 - Are there more invertebrate or vertebrate animals on the earth?
 - Give me some other examples of vertebrate animals
 - What are the categories scientists use to split vertebrate animals? There are 5 of them, and one of them is a reptile. Does anyone have an idea of another category than reptiles?
 - Give me an example of a fish

B. Wild vs. domesticated animals



Explain the difference between **wild** and **domesticated** animals: Very generally, when we say something is a wild animal, we mean that it is an animal that naturally lives independently of people. On the flip side, a domestic (domesticated) animal is tame, lives in close association with people, and is generally unlikely to survive in the wild due to its dependency on people for food, shelter, and even medication.

A video that could help: <https://www.youtube.com/watch?v=lq4EZgeuNxA>

2. Activities

Refer to Appendix C to design the layout of your posters for the 3 following activities

a. Your Family

Activity

Each student receives:

- An animal flash card (you can purchase flashcards)

- 3 post-its of the same color

On the board, create 2 sections (you can also use a poster for each section). One section is for **invertebrates** and the other one is for **vertebrates**.

Students look at their card, discuss with their classmates, and determine if their animal is vertebrate or invertebrate. If their animal is a vertebrate, they put one post-it on the section for vertebrates (or else, on the other section/poster)

To make this lesson more interesting, make sure the placement of post-it is random, they can also superimpose.

Reflection

Ask the following questions to students:

- What can you tell about our population of vertebrates vs. invertebrates in the classroom? Can we say which one we have more? → Unless you have a significantly low number of animals from one category compared to another one, it might be hard to know for sure which family has the most animals. (make sure you give a similar amount of vertebrates and invertebrates to the group of students)
- How can we tell without actually counting the post-its? (if the number of post-its are almost the same in each column, it is hard to tell)
- Is there a way we could move the post-its around so we would know exactly which family has more without counting them? (you could put them in a vertical line and see which one is bigger)

Conclusion

Your Post-it represents an animal. We do not know much more about it, but it is called data. We want to collect all the **data** and classify it. By classifying data, based on a question, we can better understand what kind of data we have collected.

b. Your Habitat

Activity

Explain to the students that their animal has a habitat. They can think of the habitat as the place where their animal goes to bed. Their habitat can be **Water** or **Land**

Students place their second post-it sticker on in the correct row on the poster #2 (Your Habitat - Appendix B). Students go one after the other so that their post-it is placed adjacent to the previous one. The 2 lines will grow parallel but will have different length.

Reflection

Prompt the following questions to the students:

- Can we tell if more animals in our classroom live on land as opposed to water? How ?
- What was different about the instructions on how to place your post-it in the first activity compared to the second one?
- Why do you think it was important?

Conclusion

Your post-it represents an animal. We do not know much more about it, but it is called data. We want to collect **data** and classify it. As you can see, the way we collect data can help us make conclusions more rapidly

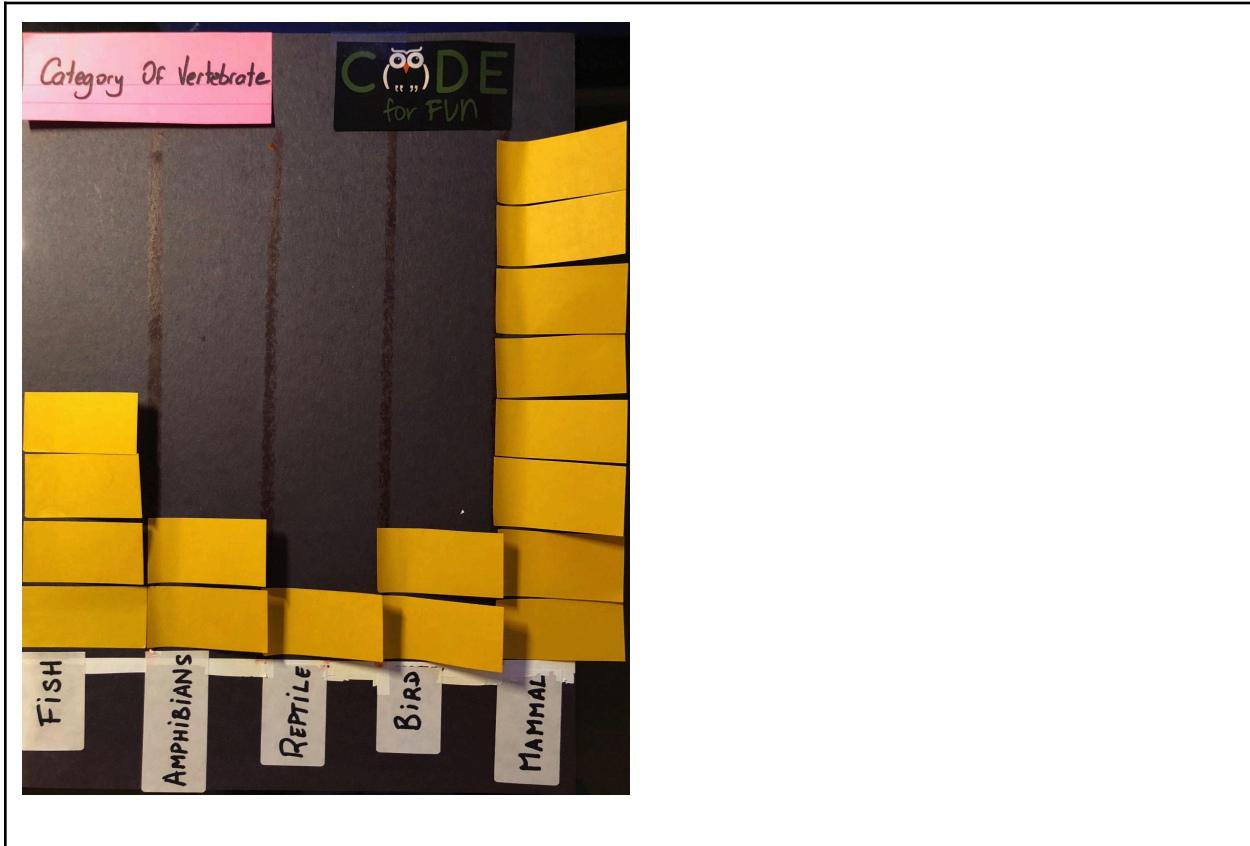
c. Your vertebrate category

Activity

Explain to the students, that we would like to know which vertebrate category is the most represented in the classroom. For that, we created a third poster: poster #3 (Your Category - Appendix C) with different columns for each category of vertebrate. If the student' cards represent a vertebrate animal, how should they place their sticker?

Make sure the students understand that they should stack their post-it from the bottom.

Example of the chart at the end of the activity:



Reflection

Prompt the following questions to the students:

- Can we tell which category of vertebrates we have the most in the classroom?
- Why is it important to stack your post-it correctly on top of the other one? What if had left spaces in between

Conclusion

When you stack your data points per category, you get a rectangle that gives you an idea of how many data points you have in that category. This is called a **Bar Chart**


3. Practice

Distribute “Practicing classification of Data” to the students. Read the instructions with them and give them time to complete the assignment

Additional project:

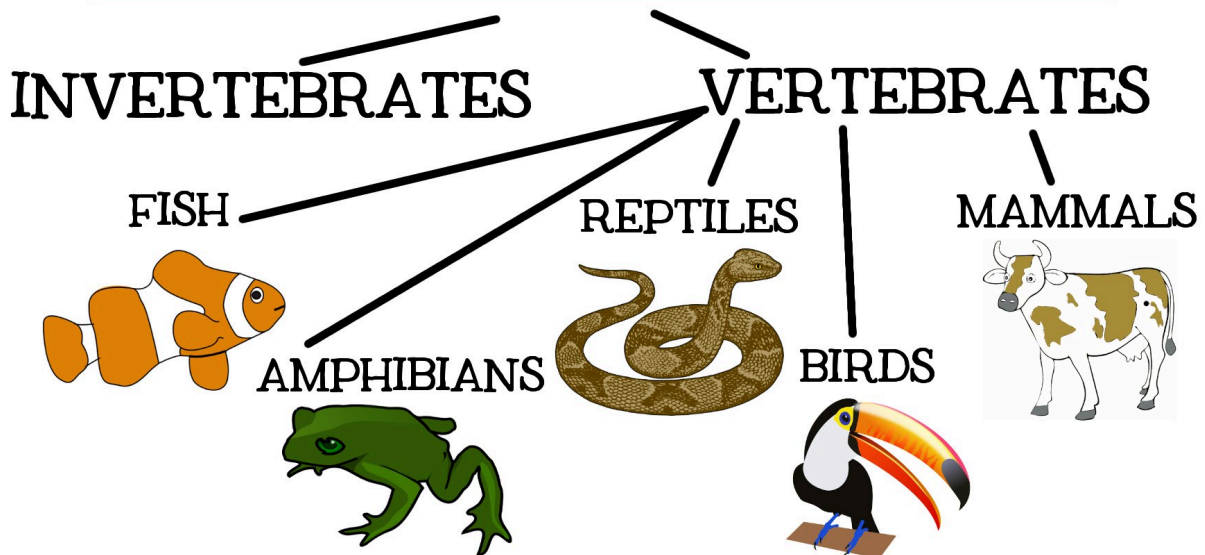
During another lesson, have students create a chart representing the candy color in a Skittles packet, by sorting them, and counting them. Review each group's charts and make predictions on what they could find in an unopen package.

4. Wrap-Up and Reflections

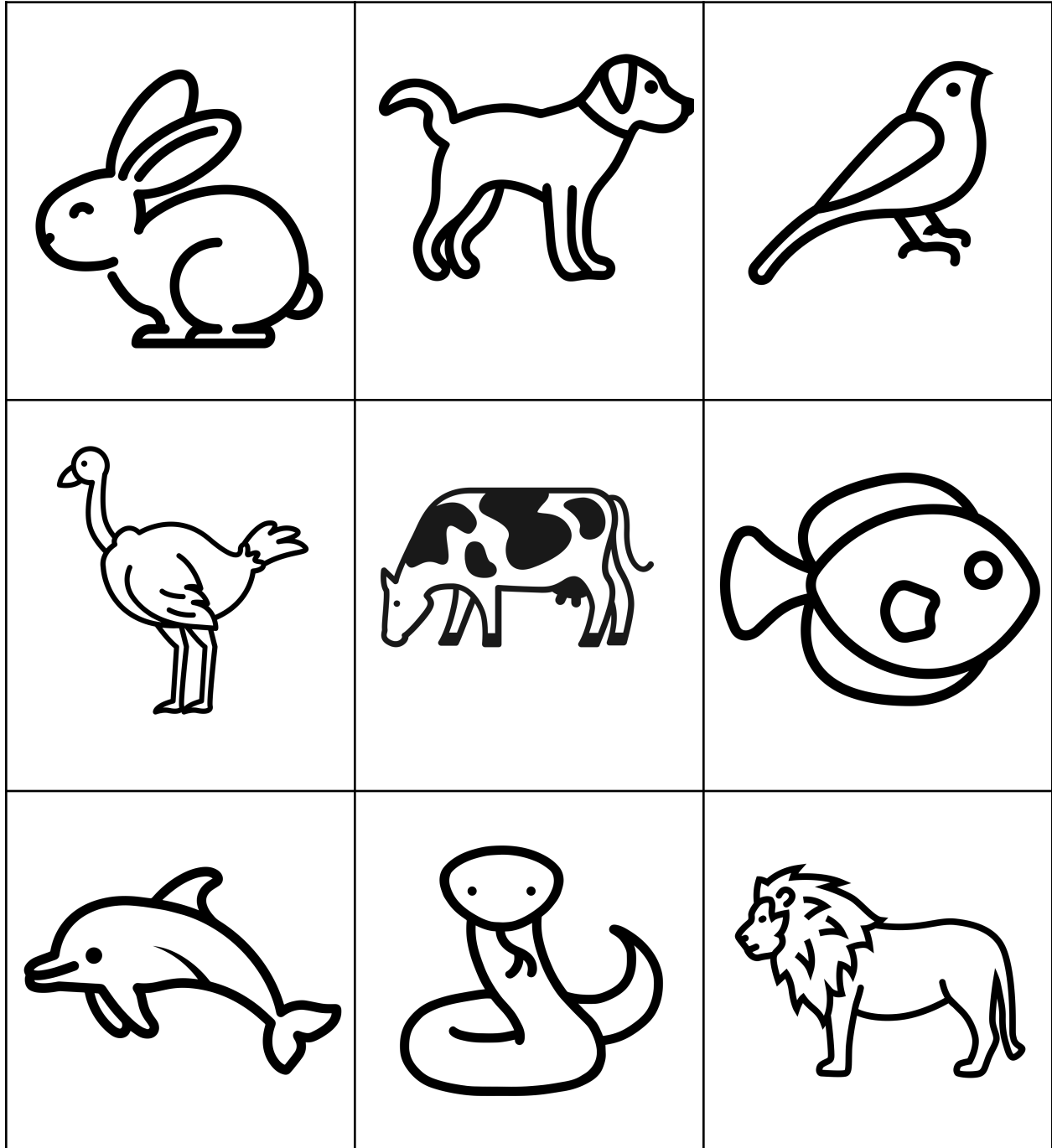
 Reflection Points:
<ul style="list-style-type: none"> • What can your computer do? • What problems will your computer solve? • Your computer is small enough that you can put it in your backpack. Do you think the first computers invented were that small?

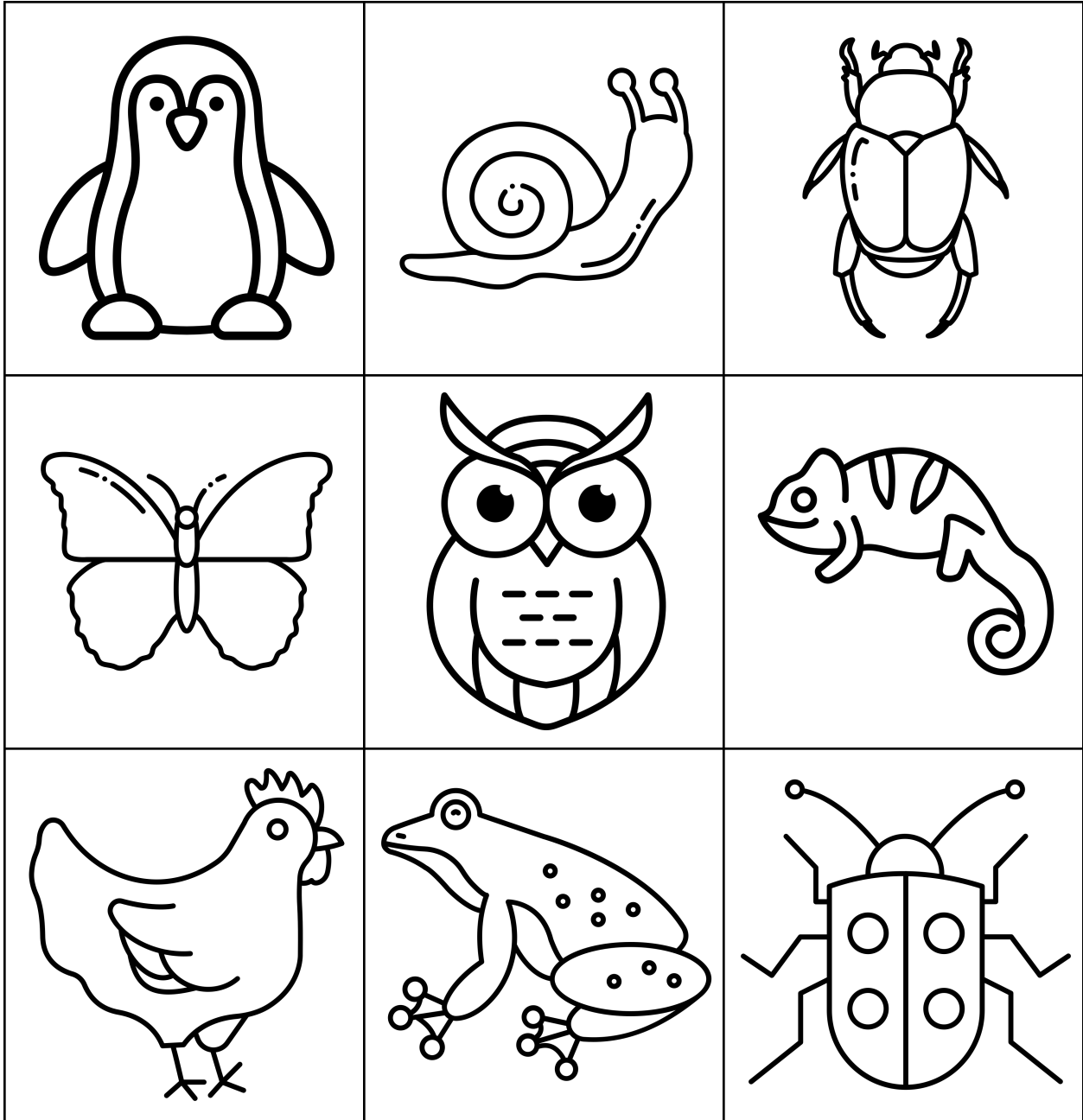
Appendix A

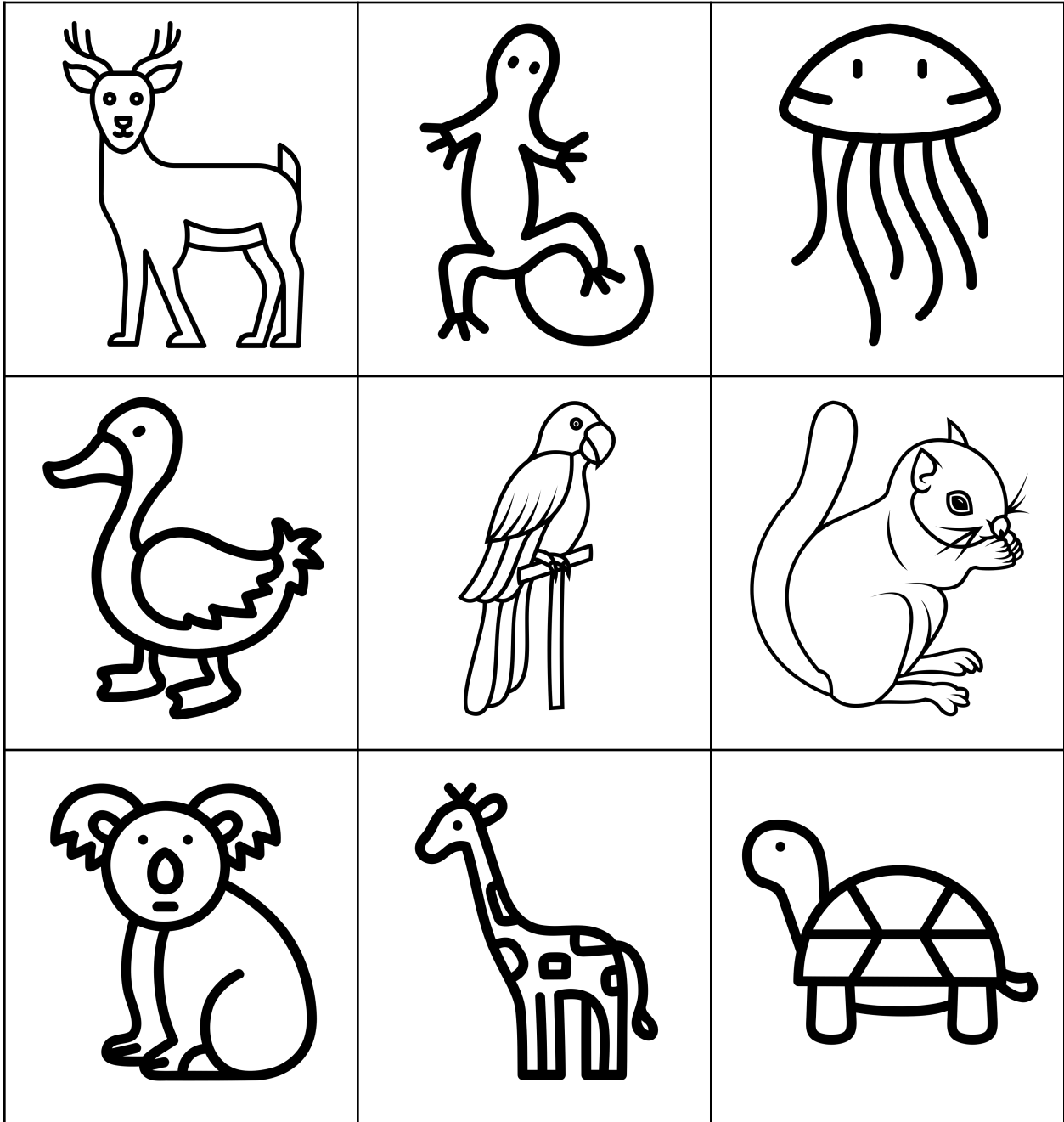
ANIMAL CLASSIFICATION



Appendix B - Animal Flash Cards







Appendix C

Posters to collect data

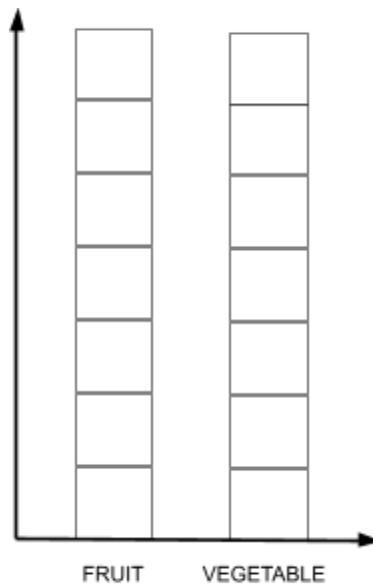
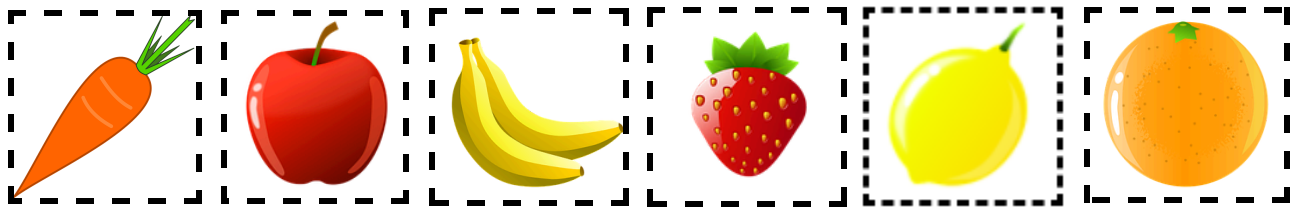
YOUR FAMILY	
Invertebrate	Vertebrate

YOUR HABITAT
Water
Land

YOUR VERTEBRATE CATEGORY				
Fish	Amphibians	Reptile	Bird	Mammal

Practicing classification of data

Instructions: You went to the market and came back with the following fruits and vegetables. Using the bar chart, color a square in the correct column for each of the items.



What conclusion can you make from your bar chart? Write one sentence

Interdisciplinary Connections

Next Gen Science:

1-LS3 Heredity: Inheritance and Variation of Traits

Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.]

LS3.B: Variation of Traits ▪ Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)