Name: _____

Date: _____

ACTIVITY 5

Open-Ended Activity

As a class, spend a few minutes reviewing the requirements of the open-ended activity.

Requirements:

- Create a superclass
- Create at least one subclass of the superclass
- Override at least one method from the superclass
- Create a program with a `main` method
- Utilize polymorphism

In addition, review the provided scoring guidelines so that you understand what you'll be expected to explain once you're done completing your program.

It's strongly recommended that the implementation of the program involve collaboration with another student. Your selected program can be anything that you choose that meets the requirement and allows you to demonstrate your understanding.

Before beginning, make sure that you understand the expectations for the activity.

- Who will you be working with? Are you allowed to work with a partner? In a group of three or four?
- Among the members of your group (or with your partner), how will the implementation will be completed?
- If you'll be using pair programming, will your teacher be instructing you when to switch driver and navigator, or is this something that you need to keep track of?
- What should you do if your group/pair is stuck? Does your teacher want you to come straight to them? Are you allowed to ask another group?

Check Your Understanding

Once your program has been implemented and tested, answer the following questions on your own:

1. Why did you choose to implement this program?

2. Describe the development process used in the completion of the project.

3. Describe another class that could be designed as a subclass to the superclass you created. Describe additional attributes and behaviors for this new class and explain how this subclass would be useful.

4. Create the inheritance UML diagram for the classes you created.

5. Copy and paste one code segment that uses polymorphism. Other than specific syntax, describe how implementing this program without inheritance would change the complexity of your program, using your copied code segment as an example.