Polymorphism

1. What does the *word* 'polymorphism' mean?

   It means that something can have many forms.

2. What does it mean when we apply polymorphism to OO design? Give a simple Java example.

   It means we can use an instance of a class as if it was another class/type at the same time.

3. What can we use to implement polymorphism in Java?
   We can use an abstract class or an interface.

4. How many 'forms' can an object take when using polymorphism?
   As many as we like.

5. Give an example of when you could use polymorphism.

   We could use polymorphism to model devices connected to a computer system where the devices share similar methods.

Composition

6. What do we mean by 'composition' in reference to object-oriented programming?

   Compositions describes a class that references one or more objects of other classes in instance variables.

7. When would you use composition? Provide a simple example in Java.
   Composition can be used when we want to pick and choose our functionality from other classes. An example of composition would be when we have classes representing car components which we can use together in a car class.

8. What is/are the advantage(s) of using composition?
   Less code. DRY.

9. When an object is destroyed, what happens to all the objects it is composed of?

   They remain.