Name: _____   Date: _____

Learning About Sorting

Vocabulary

Sorting - when you put objects from a list in order.

Algorithm - a set of instructions designed to complete a task.

Hansel and Gretel are going on a picnic. They want to bring some food, but don't know how to pack it in their picnic basket. They can only pack it in a specific order. Help them by showing them how to sort their food in two different ways!
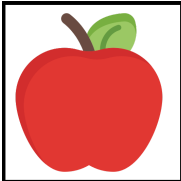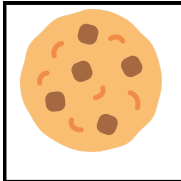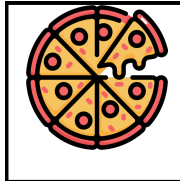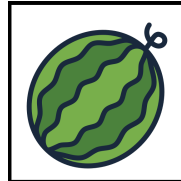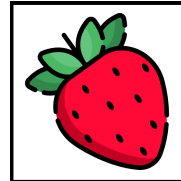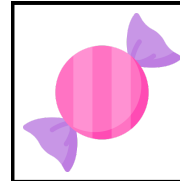
Selection Sort

First, Hansel and Gretel want to sort the food <u>alphabetically</u>!

Cut out each of the objects from the handout you were given.

Place them in front of you in this order:

Apple	Cookie	Pizza	Watermelon	Strawberry	Candy
1	2	3	4	5	6

Take a look at the **first** object. What is it?   _____

1. What comes first in the alphabet, the answer above or the **2nd** object?

_____

2. What comes first in the alphabet, the answer above or the **3rd** object?

_____

3. What comes first in the alphabet, the answer above or the **4th** object?

_____

4. What comes first in the alphabet, the answer above or the **5th** object?

_____

5. What comes first in the alphabet, the answer above or the **6th** object?

_____

If necessary, switch the answer above with the object in the **first** position. Write the order of your objects now in the boxes below:

1	2	3	4	5	6

Is the first object, alphabetically, in position 1 now?

_____

Now, ignore the 1st object. It is sorted!
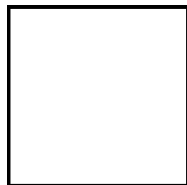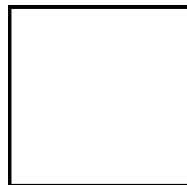
What is the **second** object? _____

    1. What comes first in the alphabet, the answer above or the **3rd** object?

       _____

    2. What comes first in the alphabet, the answer above or the **4th** object?

       _____

    3. What comes first in the alphabet, the answer above or the **5th** object?

       _____

    4. What comes first in the alphabet, the answer above or the **6th** object?

       _____

If necessary, switch the answer above with the object in the **second** position. If it is already in the right spot, leave it alone. Write the order of your objects now in the boxes below:

1	2	3	4	5	6

_____

Now, ignore the 1st and 2nd objects. They are sorted! Keep going!

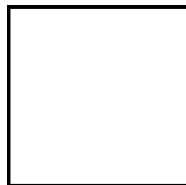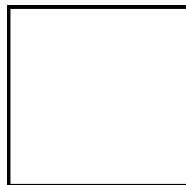What is the **third** object? _____

    1. What comes first in the alphabet, the answer above or the **4th** object?

       _____

    2. What comes first in the alphabet, the answer above or the **5th** object?

       _____

    3. What comes first in the alphabet, the answer above or the **6th** object?

       _____

If necessary, switch the answer above with the object in the **third** position. If it is already in the right spot, leave it alone. Write the order of your objects now in the boxes below:

1	2	3	4	5	6

_____

Now, ignore the 1st, 2nd, and 3rd objects. They are sorted!

What is the **fourth** object? _____

1. What comes first in the alphabet, the answer above or the **5th** object?

   _____

2. What comes first in the alphabet, the answer above or the **6th** object?

   _____

If necessary, switch the answer above with the object in the **fourth** position. If it is already in the right spot, leave it alone. Write the order of your objects now in the boxes below:

1	2	3	4	5	6

_____

Now, ignore the 1st, 2nd, 3rd, and 4th objects. They are sorted!

What is the **fifth** object? _____

    1. What comes first in the alphabet, the answer above or the **6th** object?
       _____

Switch the answer above with the object in the **fifth** position. If it is already in the right spot, leave it alone. Write the order of your objects now in the boxes below:
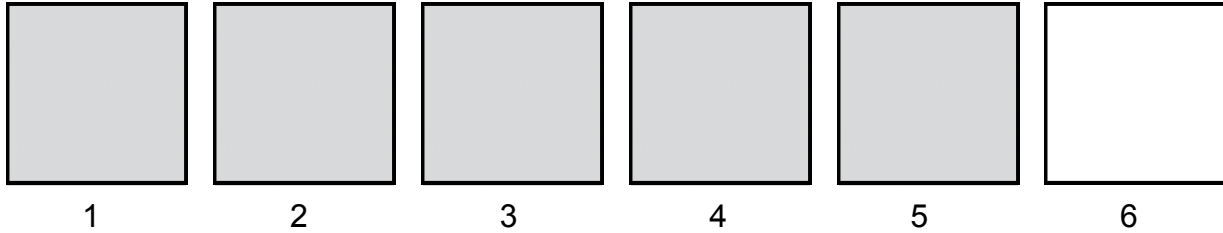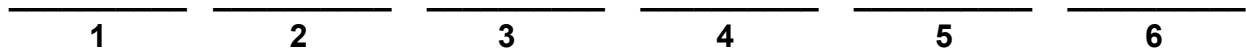
1	2	3	4	5	6

Now, all the objects are sorted from smallest to largest! Glue your sorted objects below.

    _____   _____   _____   _____   _____   _____
     1   **2**   **3**   **4**   **5**   **6**

Do you recognize a pattern in the way you sorted? What is it?

This sorting algorithm is called "Selection Sort" because you select the smallest element, then move it to the beginning. Do you think this algorithm is good to use if you had 50 objects?