

Name: \_\_\_\_\_

Period: \_\_\_\_\_

## Balancing Act

### Learning Objectives:

1. Describe the factors that determine whether two objects will balance each other
2. Predict how changing the position of a mass on the balance will affect the motion of the balance
3. Use a balance to find the masses of unknown objects

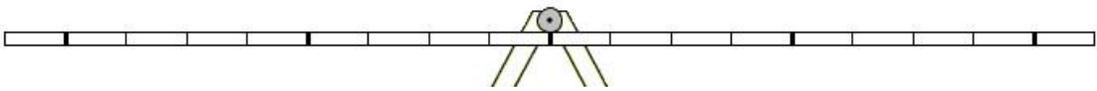
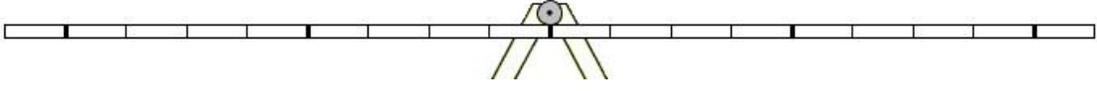
### Directions:

1. Explore the *Balancing Act* simulation with your partner. As you explore, talk about what you find with your partner (About 5 minutes).

2. Is there more than one way to get two objects with **identical masses** to balance? How?

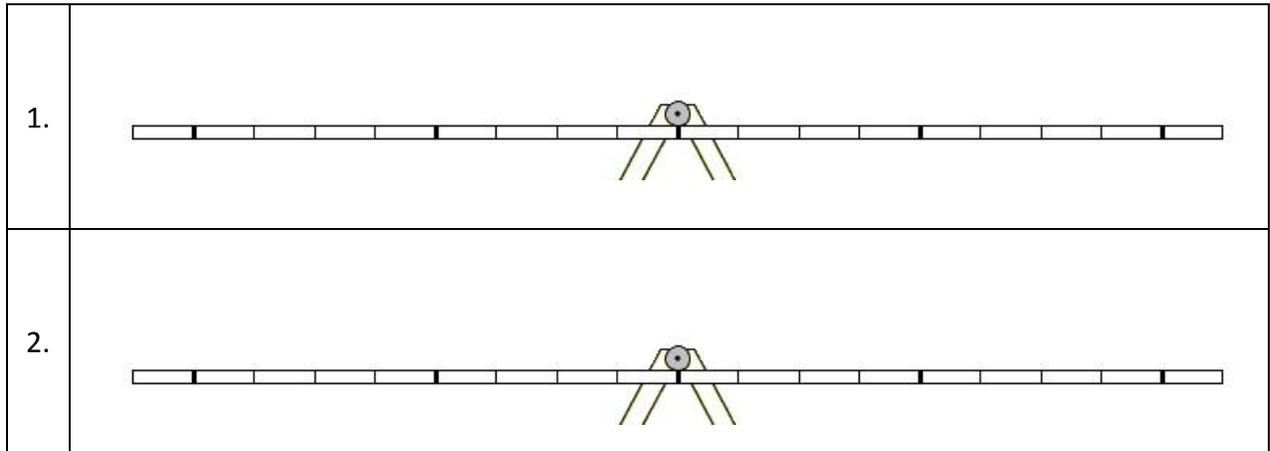
3. Next, try to get two objects with **different masses** to balance. Try to describe at least 2 different ways that you were able to balance them and draw them below.

Make sure you label the **masses** and the **distance to each mass from the center** (pivot point).

1.	
2.	

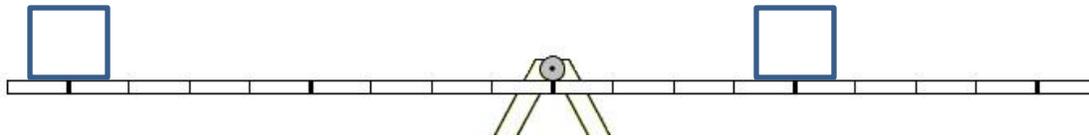
5. Draw two examples of balancing a single mass on one side with two other masses

Make sure you label the **masses** and the **distance to each mass from the center** (pivot point).



6. For your pictures in Question 5, **draw in the forces** from each mass.

7. Try to draw what will happen next if the box on the left is **45 kg** and the box on the right is **60 kg**



8. Challenge! What is the **mass** of mystery object **F**? Explain how you determined the mass.