Charlton Rolle

Principles of Physics Lab I

Date Performed: October 5th, 2020

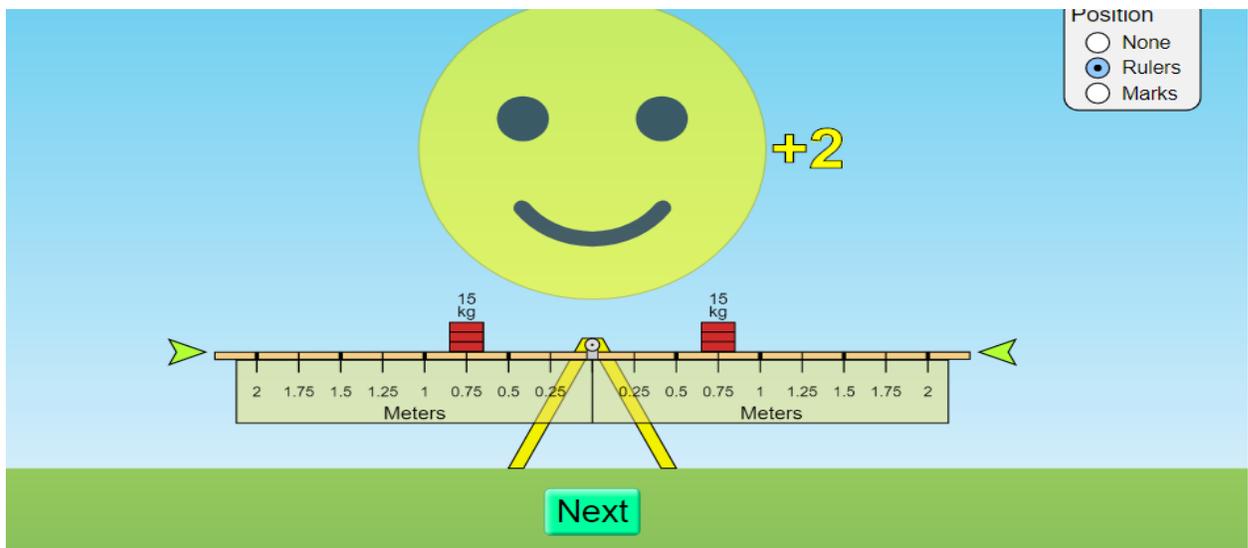Reporting Date: October 13th , 2020

Balancing Act

BRIEF THEORY

- To play with the objects on the teeter totter to learn about balance on the phET simulation.
- Explore how to balance the plank using various objects and determine the masses of mystery objects.
- Solve the puzzles – add an object to balance the plank, predict the direction the plank will move when the supports are removed, or determine the mass of an unknown object. As the level increases, the challenges become more difficult.
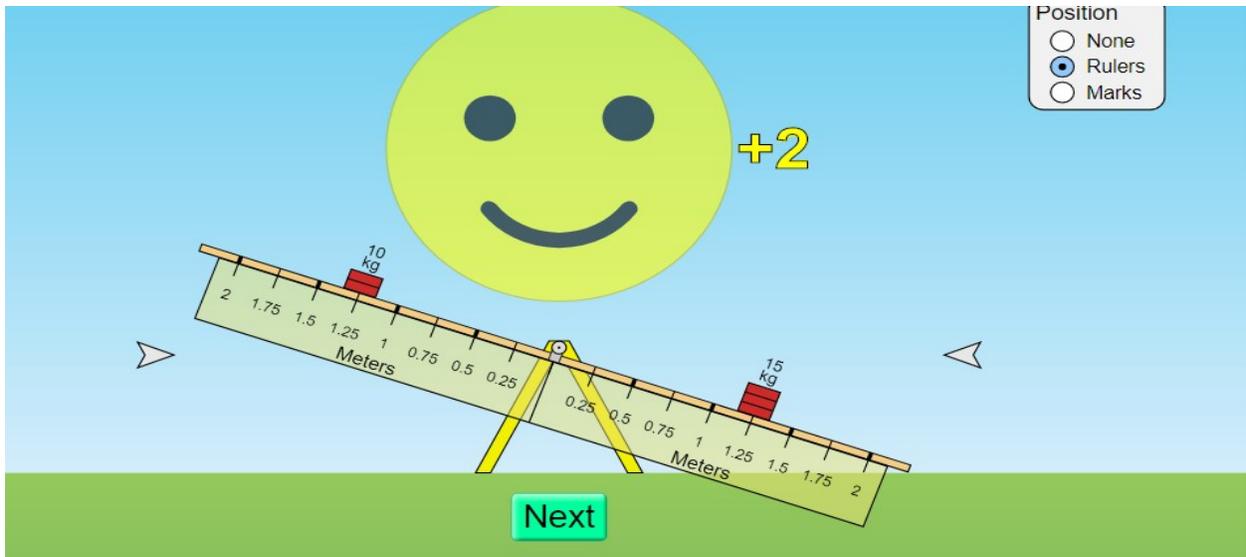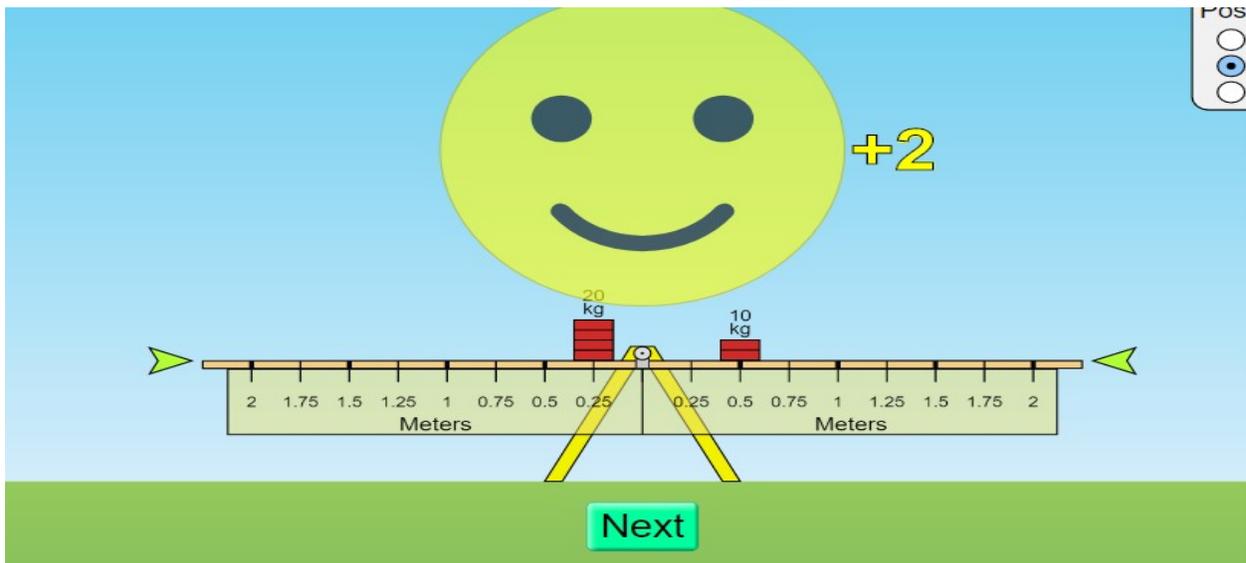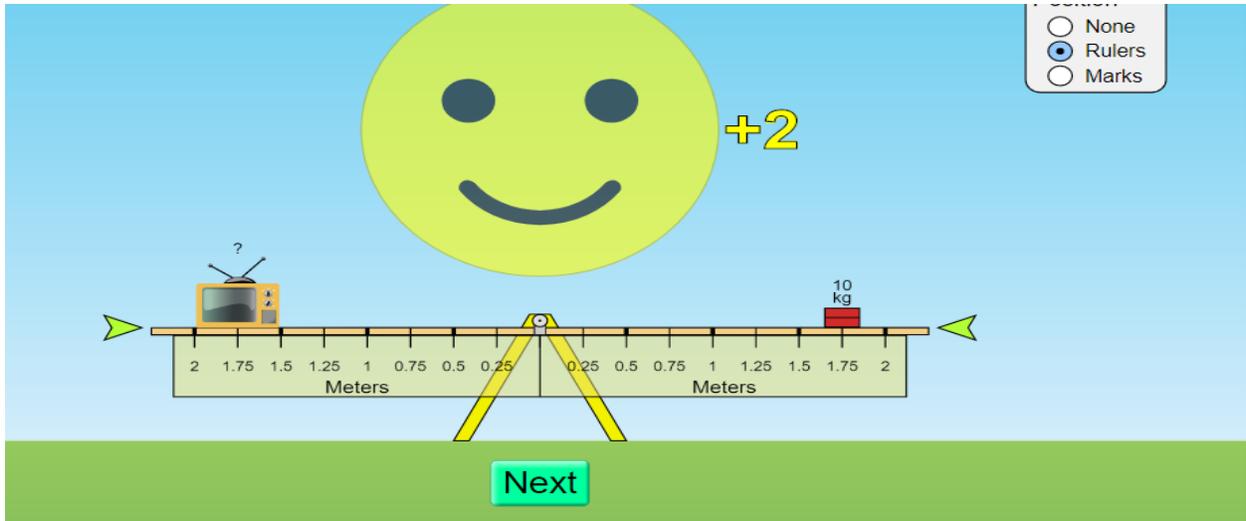
DATA PRESENTATION

LEVEL 1

a)

b)

c)

d)

+2

?

10
kg

2 1.75 1.5 1.25 1 0.75 0.5 0.25   0.25 0.5 0.75 1 1.25 1.5 1.75 2

Meters   Meters

Next

e)

+2

5
kg

15
kg

2 1.75 1.5 1.25 1 0.75 0.5 0.25   0.25 0.5 0.75 1 1.25 1.5 1.75 2

Meters   Meters

Next
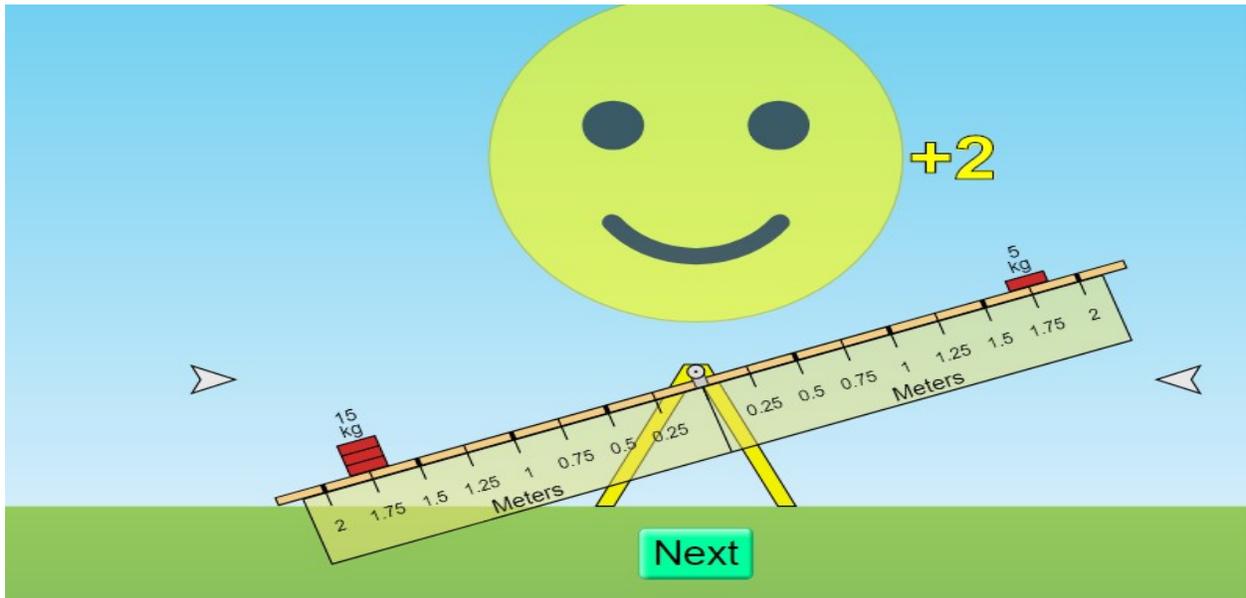
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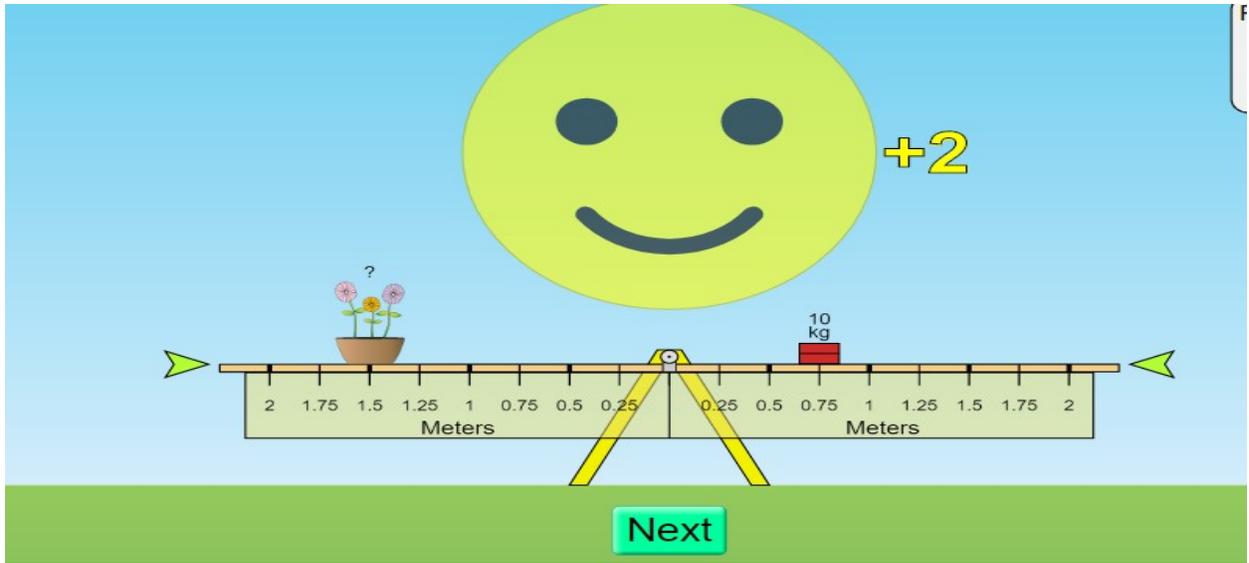
LEVEL 2

    g)
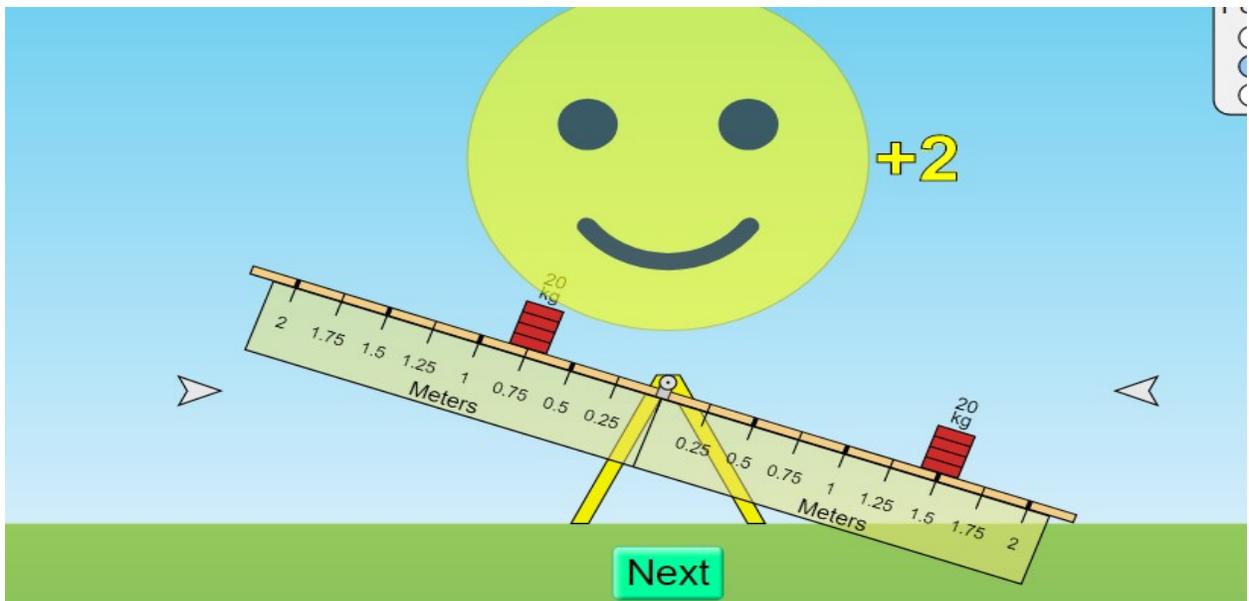
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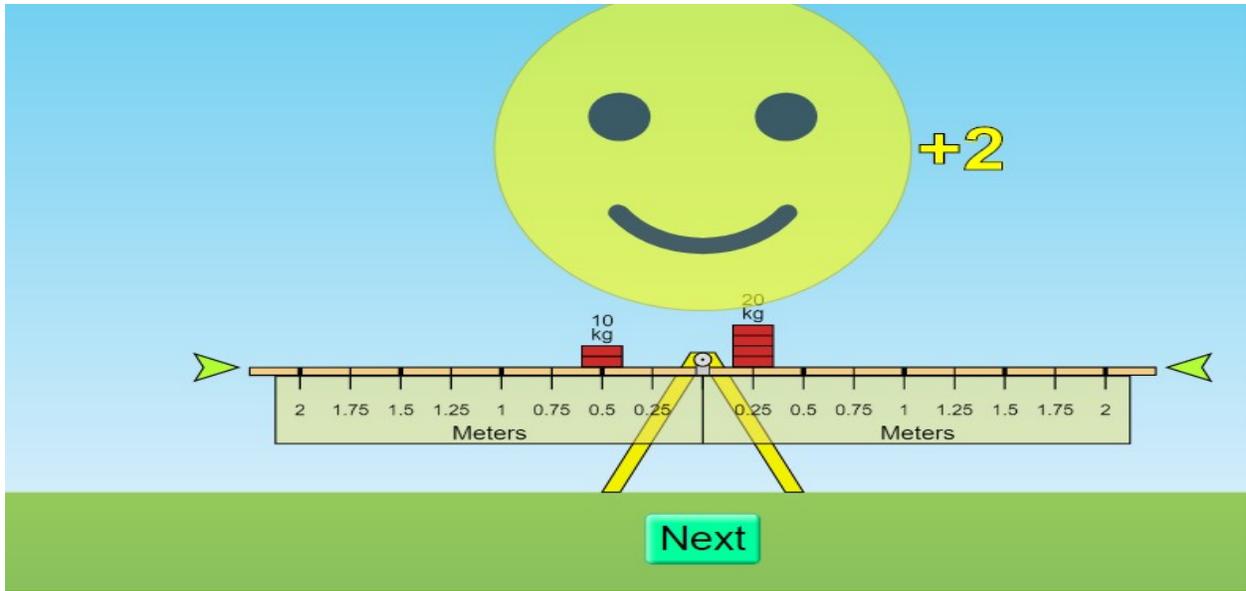
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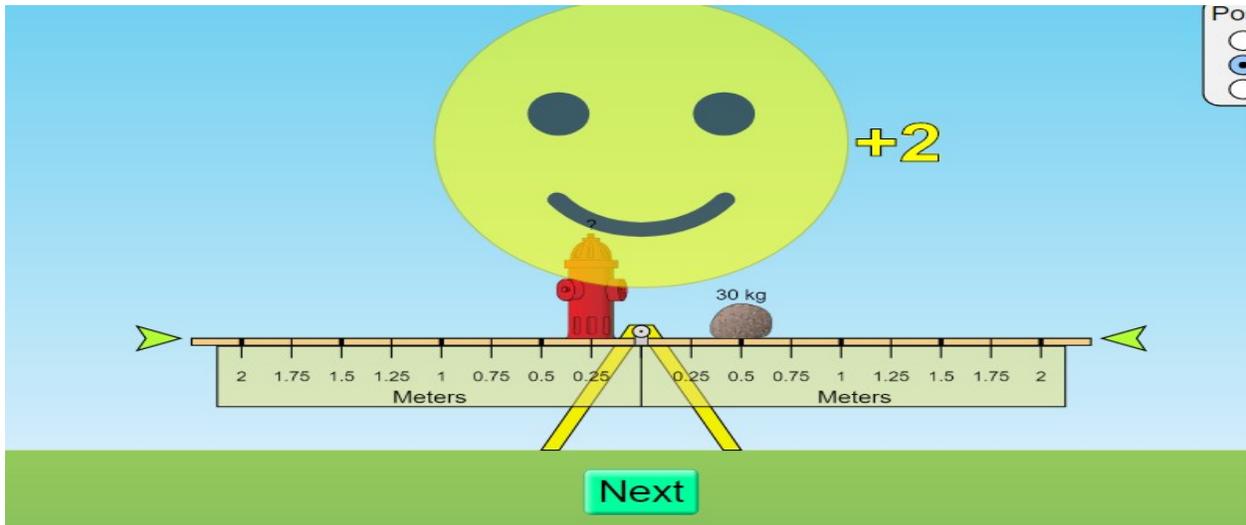
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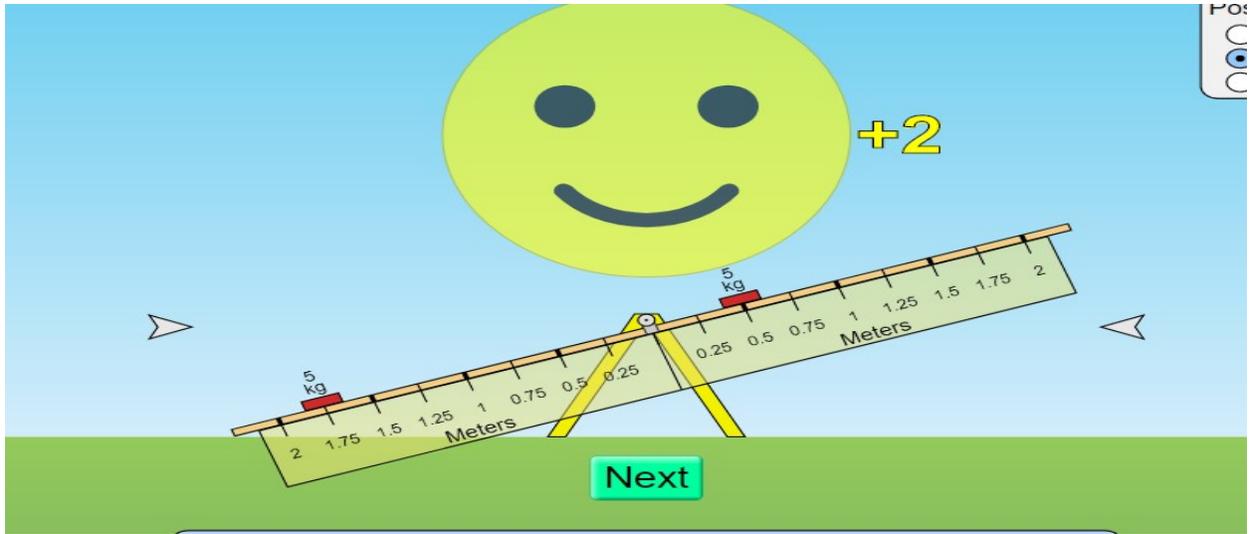
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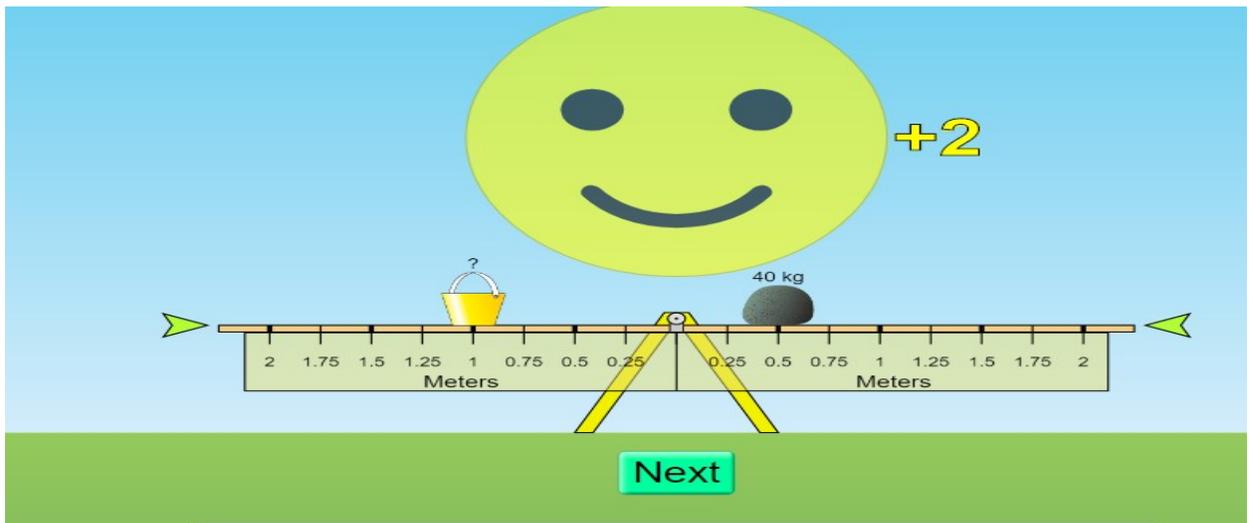
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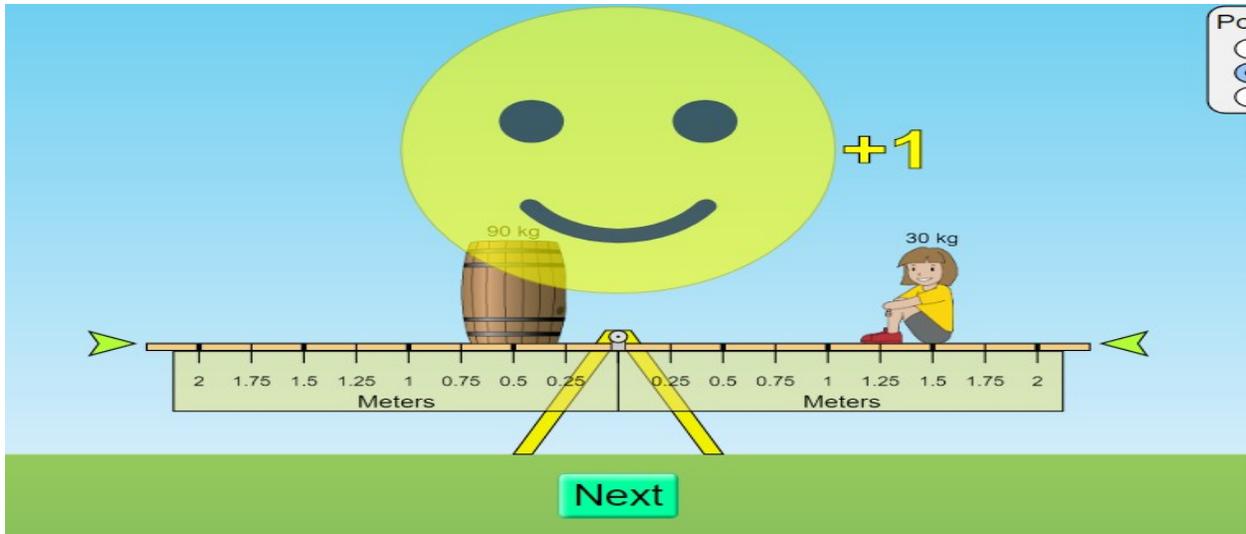
LEVEL 3

m)
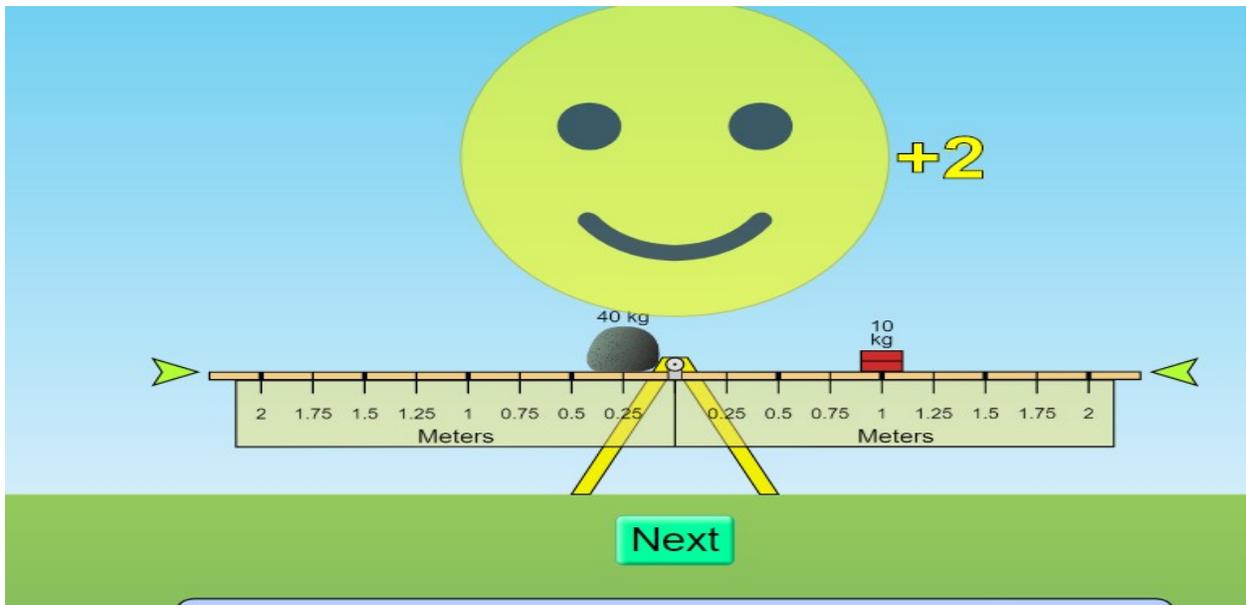
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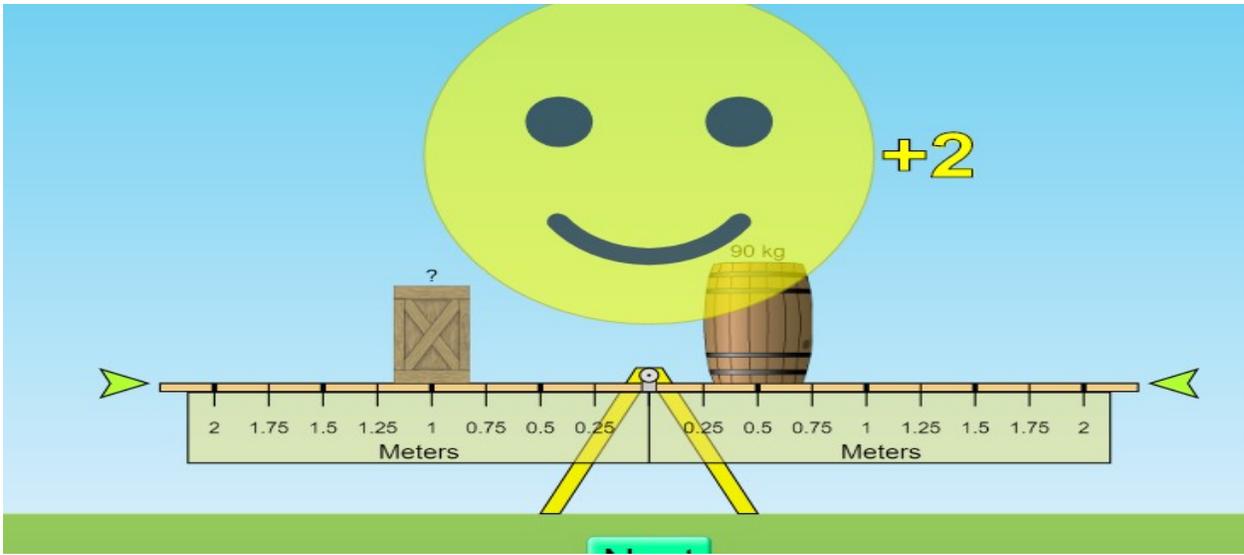
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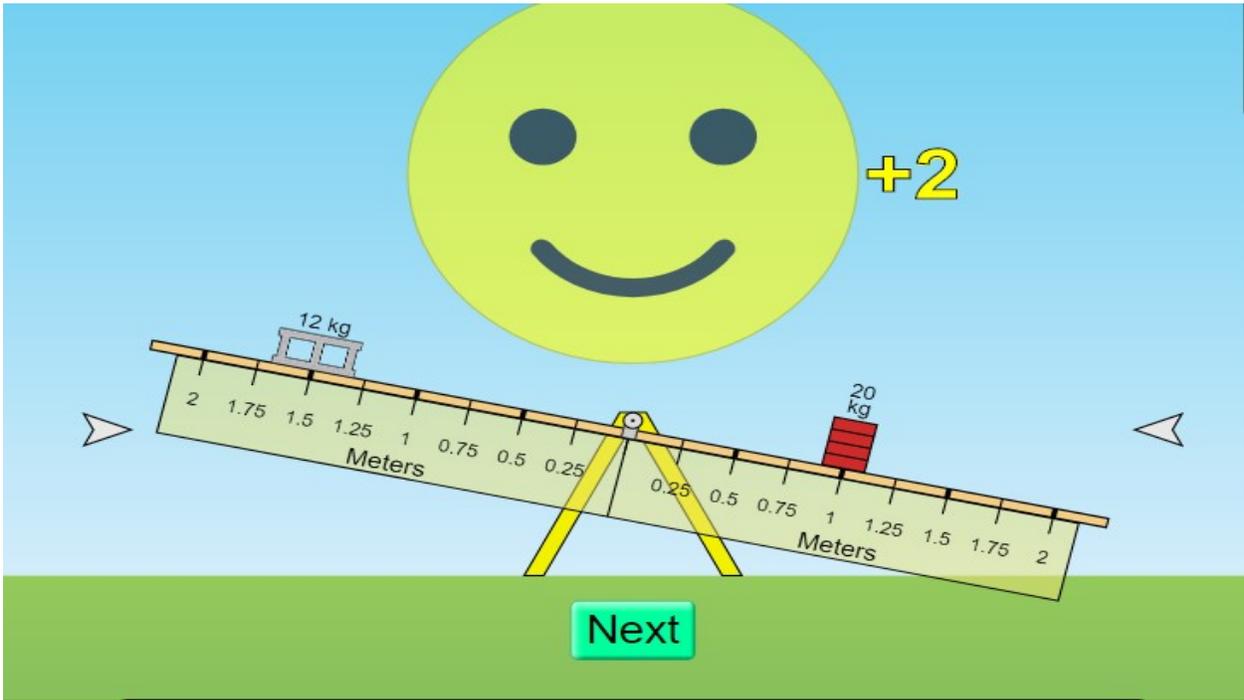
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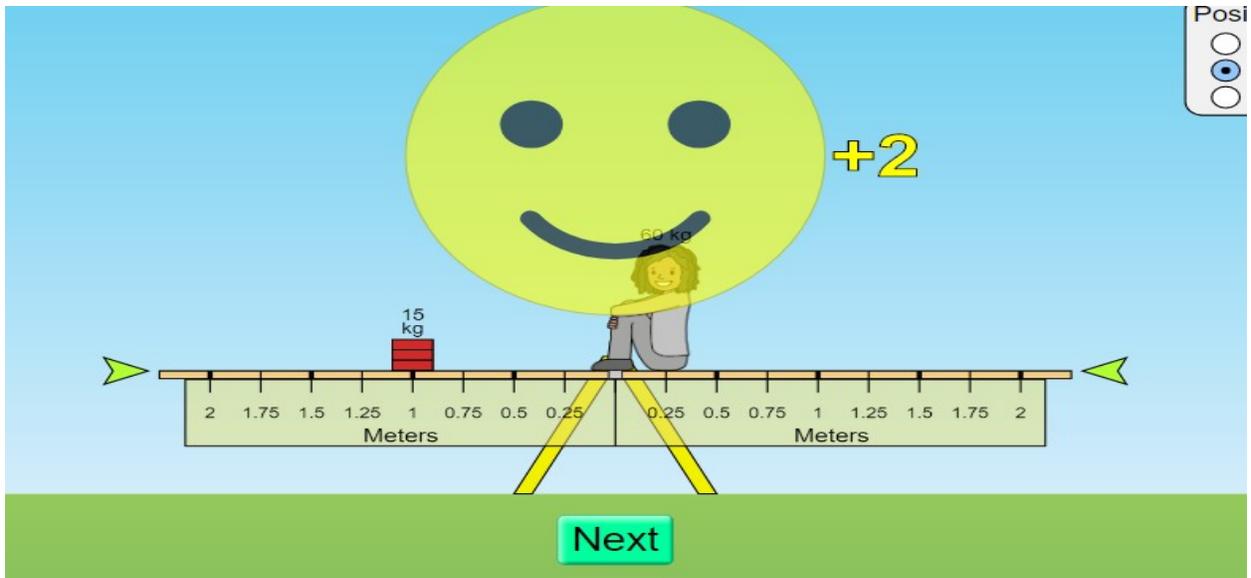
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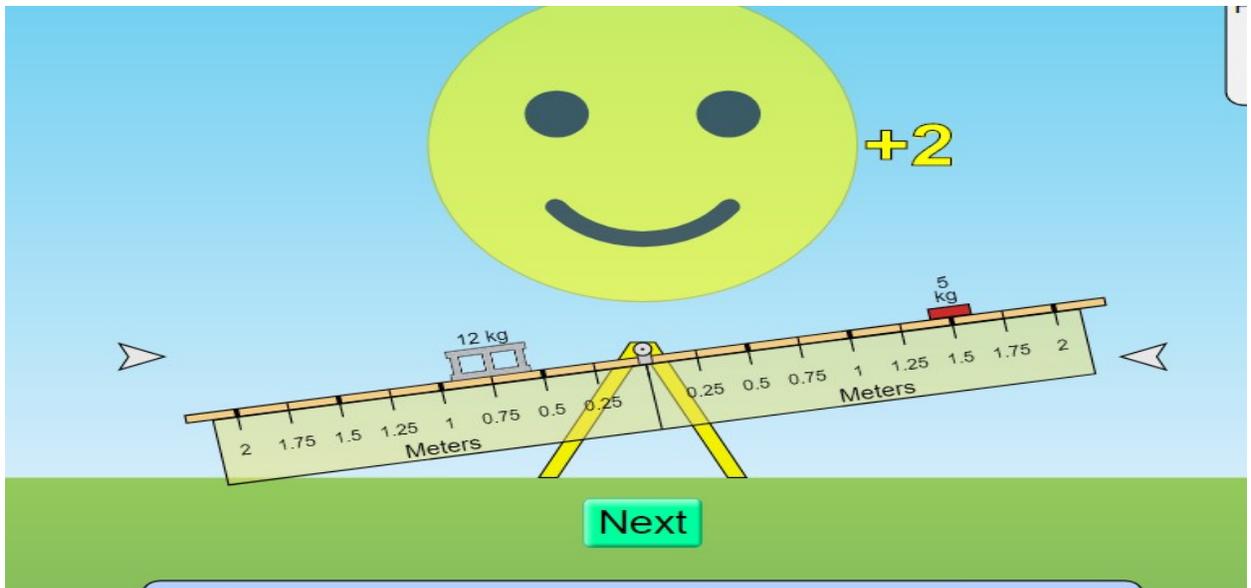
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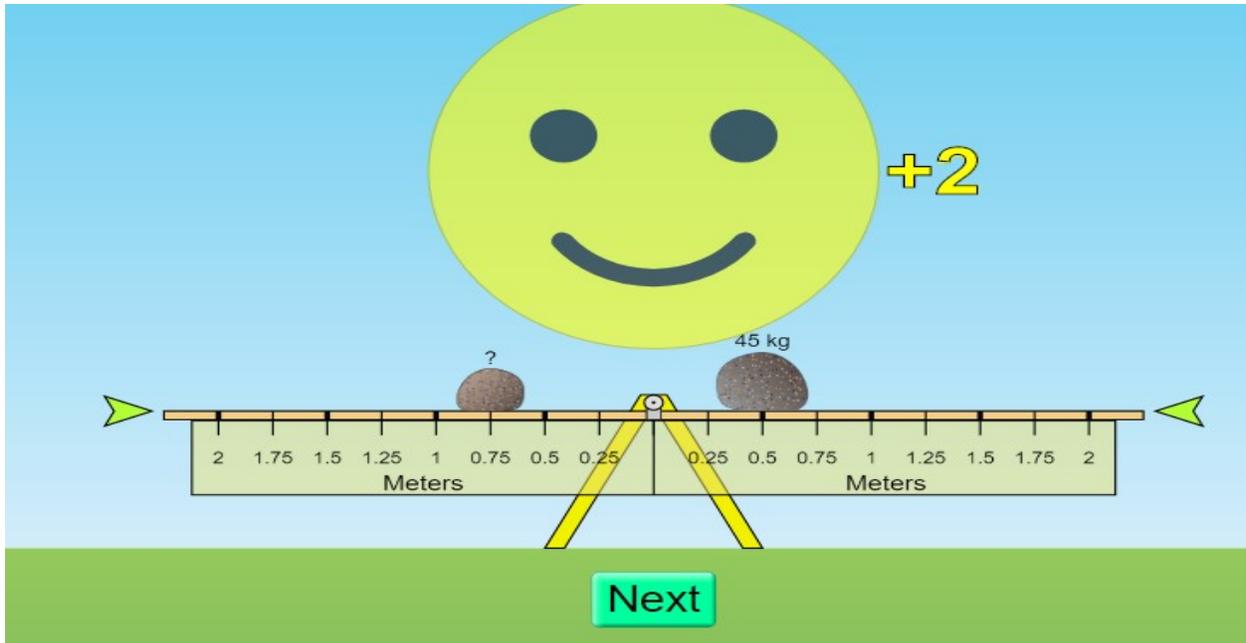
LEVEL 4

s)
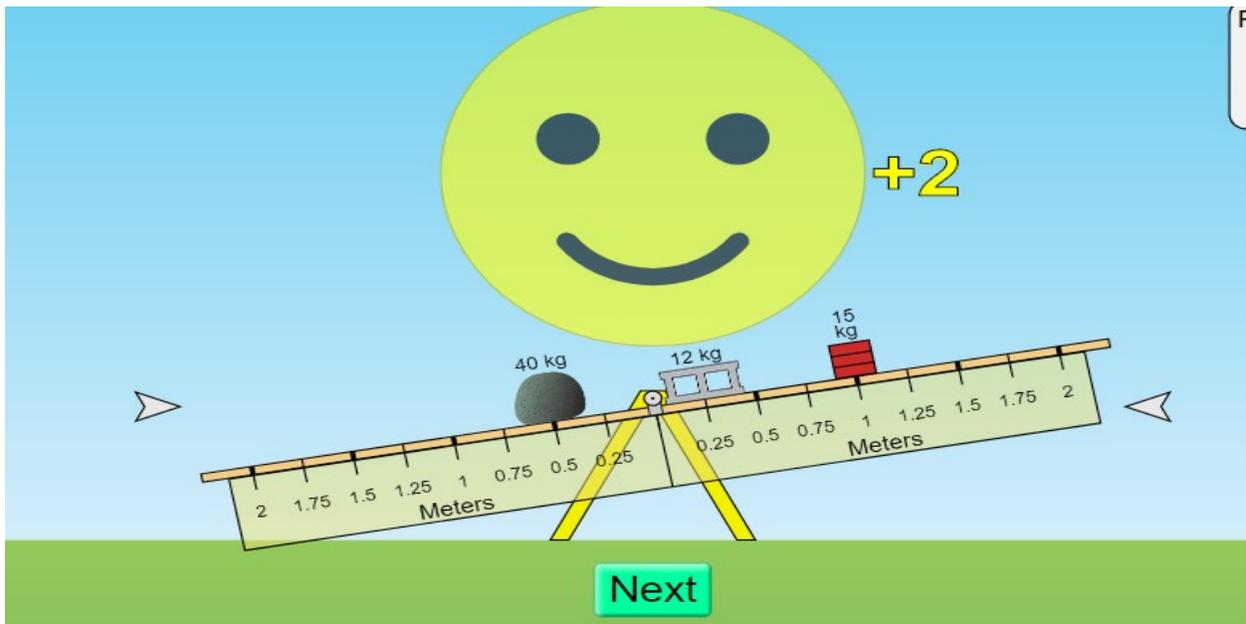
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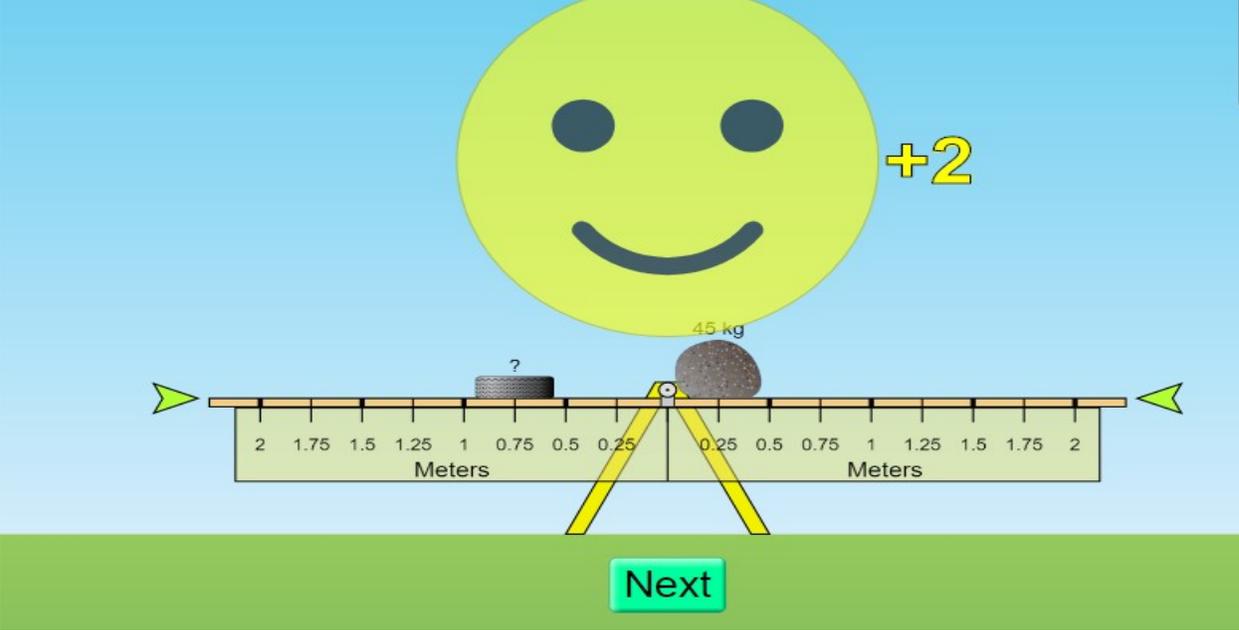
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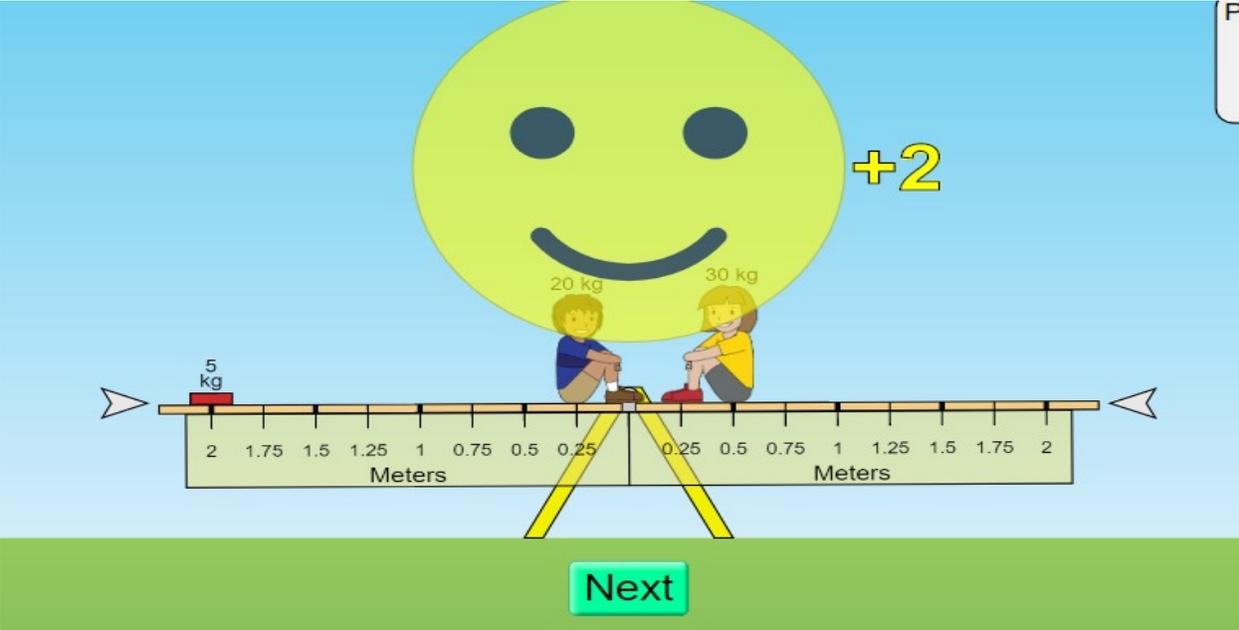
v)
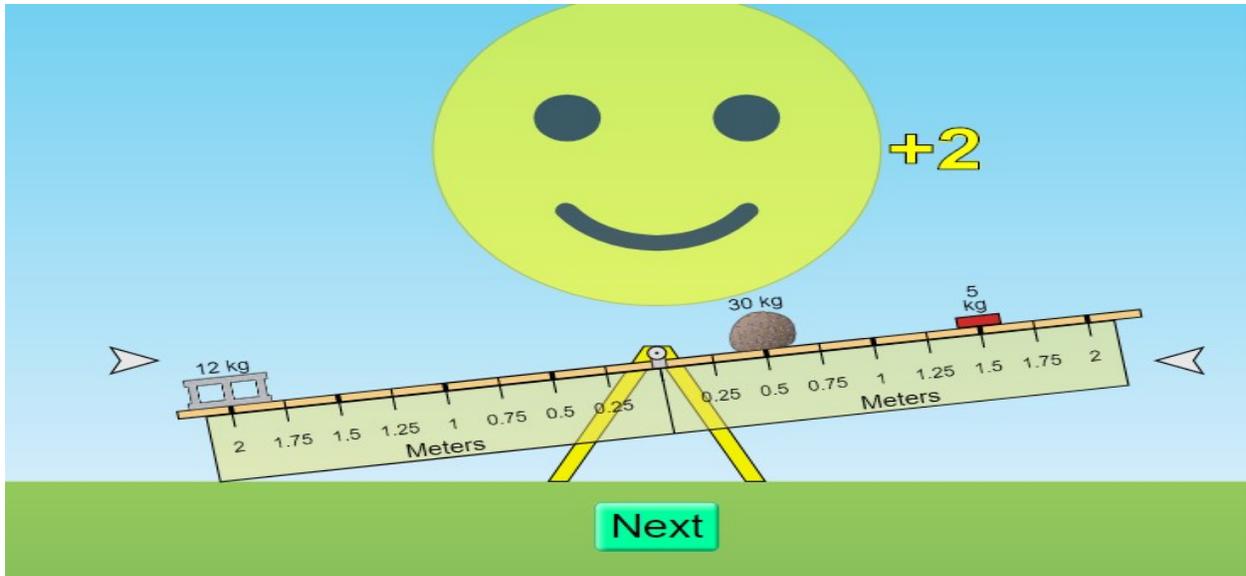
w)

x)

- Balance two objects with unequal masses.

- Predict how adding an object (or repositioning an object) will affect the motion of the plank.
  Adding another object affects the plank by causing it to tilt to the side of the larger.
- Design an experiment to determine the mass of a mystery object.
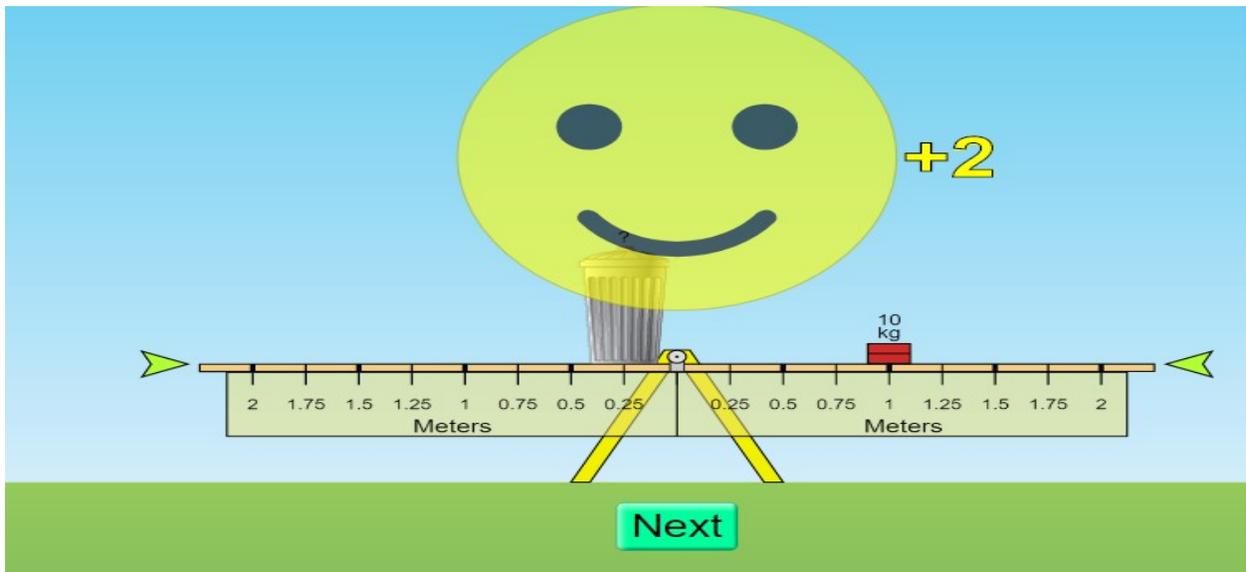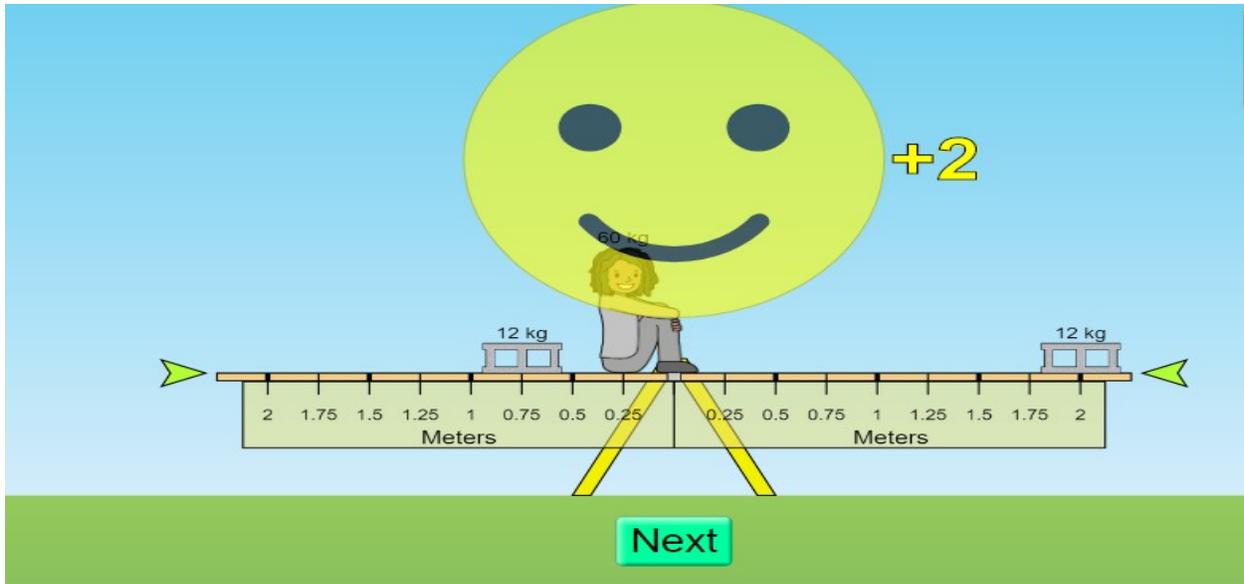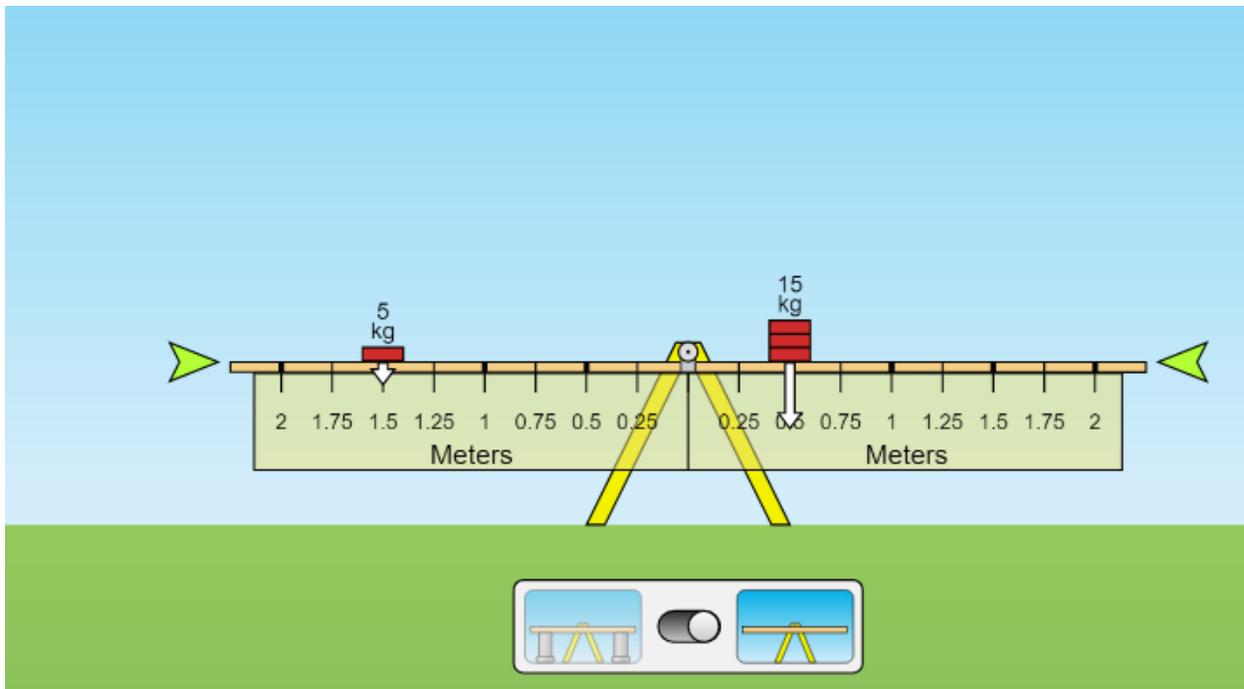 To determine the unknown mass:
  m1*r1/ r2= m2
- Create a general rule to describe how the plank will tilt.
  If the masses on the objects on each side are not the same, the plank will tilt to the side of the larger side.

CONCLUSION

The experiment demonstrated:

- How to a plank by using multiple objects with different masses.
- How to determine the direction of the plank when the supports are removed.
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Class: Principles of Physics Lab I

Section: PHYS 213 01 L