

# Weighing and comparing three objects

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## Annotation

Joshua shows that he understands that heavier objects will have more downward pull when he picks them up. He is also able to transfer his understanding to the balance scales by identifying that the pan that goes down holds the heavier object. By systematically comparing the weights of pairs of objects on the balance scales, Joshua is able to correctly order three objects by weight and confirm his original hand-weighed estimates.

## Problem: Weighing and comparing three objects

The teacher provides the student with three objects of noticeably different weights. The teacher asks the student to hold each object to estimate their weights and then arrange them in order from the heaviest to the lightest. The teacher then asks the student to use balance scales to check their original hand-weighed estimates and asks:

*Which is the heaviest; the glue stick, the box of staples or the scissors?*



## Student Response

Joshua weighs the glue stick, the box of staples and the scissors in his hand and then arranges them in an order from heaviest to lightest. Then he uses the balance scales to check his estimate.

Joshua: The box of staples.

Teacher: How do you know?

The box of staples felt the heaviest. When I put the staples in one pan on the balance scales, with the glue stick in the other, the staples end went down. The staples went down

Joshua: again when I did it with the staples and the scissors. So the staples are the heaviest. When I did the glue stick and scissors, the scissors went down a bit, so the scissors are next and the glue stick is last. So I was right.