Is It A Half?[1]

Purpose:
To introduce the concept of ½. To have students extend intuitive notions of ½ (split into two equal pieces) to thinking about ½ in terms of the *area* of a shaded figure (even if one cannot see two equal pieces).

Materials:
Bags of cards to be sorted (1 bag per pair)
Large paper, divided into two parts down the middle. Left side is labeled Half and right side is labeled Not A Half. (1 paper per pair)
Optional: tape or glue

Description of Activity:
- Each pair of students is given a bag of cards shaded in different ways.
- They are also given a large piece of paper with a line down the middle. One side is labeled **Half**, and the other is labeled **Not A Half**.
- In pairs, students take one card from the stack, discuss whether it represents and half or not (and why) and then place the card on the Half or Not-a-Half side, as appropriate.

The next pages contain some shaded examples of these rectangles for sorting.
The last page has a template so more can be created.

One Possible Implementation:
Launch: With whole group, discuss ½. Where in everyday life do we see one half? Brainstorm and record on poster paper. Introduce concept that we say something is one half if it is half of the area (or length or volume) of the object. Discuss one or more examples that students had generated in terms of the *area.*

Activity: Students work in pairs. (see above)

Discussion: Whole class reconvenes. There's a large post-it paper or other public display labeled Half and Not-a-Half. The teacher uses cards students have, or new cards from a bag, and asks different students to come up to (a) place the card and (b) explain why the card is or is not a half.
Listen for:
- How students are making arguments
    - Matching pieces to show equal areas, or show by matching that shaded and unshaded are unequal
    - Showing 8 of 16, or not 8 of 16
    - Relating one card to another card (e.g., This one is like this one, except…)
    - Listen for misconception that it *has* to be symmetric

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[1] Task created by Sarah Edwards, 2015, Manchester Public Schools, CT.