

Polygon Capture -- Game Rules

Adapted from: Carroll, William M., "Polygon Capture: a Geometry Game", *Mathematics Teaching in the Middle School*, Oct 1998. Vol. 4, Iss. 2; p. 90

Content: Two dimensional geometric shapes and their properties.
Game for two or more players or teams.

Set up: The game set contains property cards and a set of polygon cards. The polygons go into the center of the playing area and the side and angle property cards are separated into two shuffled, face down piles. Separate out any blank cards.

Goal: Capture the most polygons.

Play:

1. Youngest player goes first. Take turns clockwise (to the left) after that.
2. The player flips over an angle card and a side card. She may capture any one card which satisfies **both** these properties. If another player disagrees, they may say so. If the challenge is right the challenger gets the polygon. If the player says there are no matching polygons, but another player sees one, they can claim it for themselves. (If there's more than one match, more than one player can take a shape this way.)
3. The next player takes a turn in the same way.
4. Play continues in this manner until the cards are used up, the polygons are all taken.
5. Players count up how many polygons they have captured. The player with the most polygons wins.

Notes:

If the **Wild Card** comes up, the player may choose any side property. For example, if the angle card is "All angles are right angles", she may choose "All opposite sides are equal" and capture a rectangle. You still have to satisfy the angle property.

If the **Steal Card** comes up, the player picks one angle property, and may steal a match from another player instead of the center of the table. You DO NOT have to match the side property.

Doodle Page:

Flip up a side and angle card. Can you draw a shape to match?

<p>2 or more right angles</p>	<p>At least one angle is obtuse</p>	<p>No angle is a right angle</p>	<p>At least one angle is acute</p>
<p>At least one angle is a right angle</p>	<p>At least 3 angles are acute</p>	<p>At least 2 angles are congruent</p>	<p>At least two PAIRS of congruent angles</p>
<p>At least 3 acute angles</p>	<p>At least 2 obtuse angles</p>	<p>Exactly one pair of congruent angles</p>	<p>Has no congruent angles</p>
<p>STEAL Pick an angle property and ignore the Side Card</p>	<p>WILD Has at least 2 _____ angles (Choose from acute, right and obtuse)</p>	<p>Has at least 2 supplementary angles (angles that add to 180°)</p>	<p>Has at least 3 angles</p>

POLYGON CAPTURE Angle Card	POLYGON CAPTURE Angle Card	POLYGON CAPTURE Angle Card	POLYGON CAPTURE Angle Card
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Has at least 5 sides	Has a pair of non-adjacent non-parallel sides	Has an even number of sides	Has at least three congruent sides
Has at least 1 pair of perpendicular sides	No sides are congruent	Has at least one pair of adjacent congruent sides	STEAL At least 1 pair of sides are... (Choose perpendicular, parallel or congruent) IGNORE angle card
No parallel sides	All sides are congruent	Exactly one pair of sides is parallel	Has more than 1 pair of sides that are perpendicular
It is not a quadrilateral	It is a quadrilateral	Has an odd number of sides	WILD Pick your own side property (still have to match angle)

<p>POLYGON CAPTURE</p> <p>Side Card</p>	<p>POLYGON CAPTURE</p> <p>Side Card</p>	<p>POLYGON CAPTURE</p> <p>Side Card</p>	<p>POLYGON CAPTURE</p> <p>Side Card</p>
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