Title: For the Win Three Act Task

link: https://gfletchy.com/for-the-win/

Big Idea: Properties of objects can be described, measured and compared using angles
Curricular Competencies: using *reasoning and logic* to explore, analyze and apply mathematical ideas*, estimate* reasonably, *demonstrate and apply* mental math strategies, *apply* multiple strategies to solve problems in contextualized situation, play, inquiry and problem solving
Content: geometry and angles, measurement and classification
Core competency focus: Communication

Before:

WODB think mats project the image (*see below)*
Chistopher Danielson's book Which One Doesn't Belong (available through the LRC).

You may project this image or copy for table chats. Sets of 4 shapes are presented in such a way that any one of the four can be seen as different from the other three. This small adjustment takes a simple activity about noticing sameness and difference and transforms it into a challenging task that supports rich conversations requiring precise language use and sophisticated argumentation. It's about expressing mathematical relationships precisely in order to communicate with others.

Number Talk: Posing the investigation (Number Talks page 153 -158) Pose the challenge by saying something like "We're going to investigate ways of representing the Break a Factor into Addends strategy geometrically. Think about the problem 8 X13…record student thinking.
"I want you to think about how you might represent *'s way of thinking geometrically. This may be new to many of you, so please give everyone time to think about it on their own. Share in a group. Puzzle over what "geometrically" might mean.

If no one has used the geometric representation below, ask, "If I were to draw a rectangle that represents 8 X 13, who could tell me how to draw it?" (without drawing it themselves – this gives students experience with describing dimensions)

During

ACT ONE:

Establishing a Need to Know**: (**view video *** 15 secs & still picture)

What did you notice?	What do you wonder?

Driving Question:
Where could you shoot the white ball to sink the #8 black ball in the far corner without hitting the striped ball first?

Estimating:

Use the student recording sheet to make your estimation. Be sure to explain your reasoning.	Offer student recording sheet in dry erase sleeves.

ACT TWO:

What information would be useful to know for solving this problem?
What information do you know? What information do you need? What do you need to know about angles? Project image View the clip *For the Win (can't go there) 21 secs*

Work in random trios to represent thinking in pictures, numbers and words on stand-up think boards.

After

ACT THREE: view the sinking of the eight ball

Extensions

Reflect on the process of solving a problem with angles. How is this problem more visual than other math problems?

What worked? Was difficult? Would you do differently?

Other sites for exploring Which One Doesn't Belong:

http://wodb.ca/numbers.html
http://sites.stenhouse.com/wodb/
http://www.mathtalks.net/ Math talks by Fawn Nguyen (most commonly called *Number Talks*)