MYCI 2013-14

Middle Years Collaborative Inquiry

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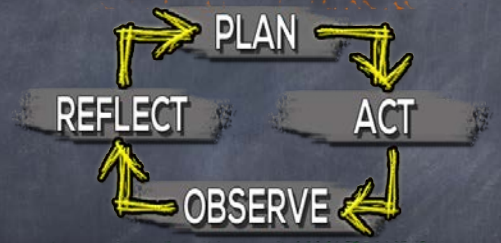

MATHEMATICS

LEARNING FAIR

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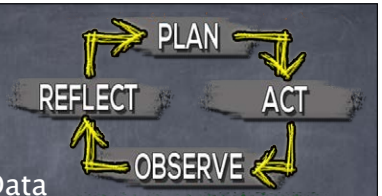
Agenda



- Sign-In and Welcome
- Analyze & Submit Cycle 4 Data
- Jigsaw – Share-Out With Other Groups
  - Break
- EQAO Test Deconstruction and Data Analysis
  - Lunch
- Learning Goals and Task Redesign
  - Break
- Team Consolidation and Next Steps
- Goodbyes

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Theory of Action

Effective Teaching Practice

+

Transformational Technology Use

Increased Student Success

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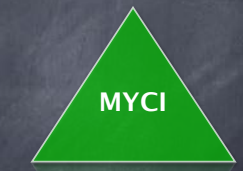
Professional Learning Cycle Through Collaborative Inquiry

Effective Instructional Practice



Embedding Technology

SAMR Model Progression

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Professional Learning Cycle Through Collaborative Inquiry

Effective Instructional Practice

Embedding Technology

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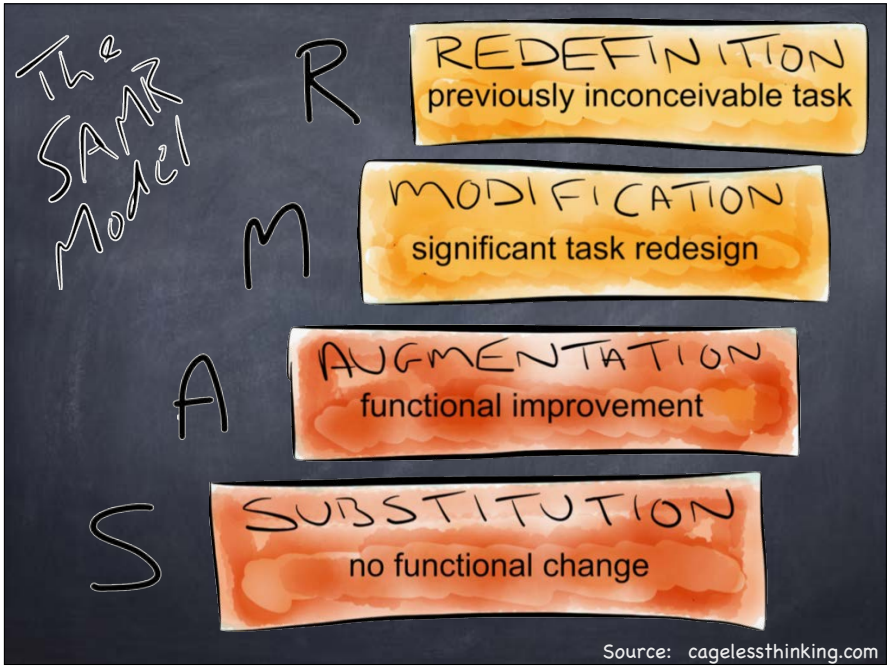

Monitoring Progress

35% of over 2500 students showed improvement.

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Monitoring Progress

59% of students below level 2 showed improvement.

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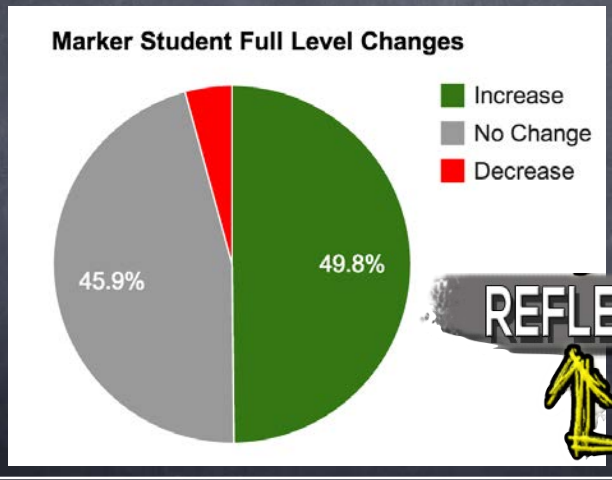
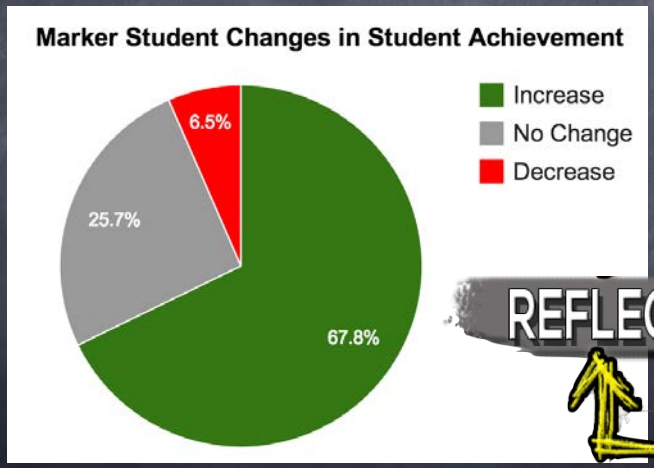
Monitoring Progress



REFLECT

Monitoring Progress



REFLECT

Reflect

- Access the Data Submission form here:

http://tapintoteenminds.com/myci/submit

- Take some time to analyze and submit your data for cycle #4.
- If you have yet to submit data for a previous cycle, you may do so at this time.

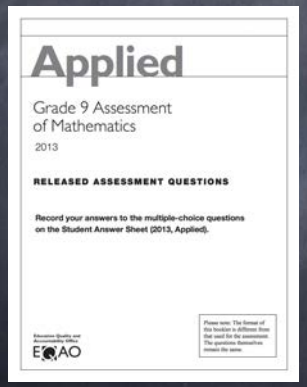
Team Jigsaw

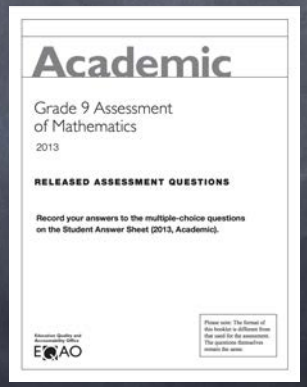
- Number your team from one (1) to _____
- Go to **your table number**.
- Each participant will have 3-5 minutes to share:
  - Student learning need and changes in practice,
  - Successes/Failures/Key Learning.
- Then, share-out with your **own** team.

BREAK

EQAO Test Deconstruction

Education Quality and Accountability Office
EQAO





EQAO Test Deconstruction

Education Quality and Accountability Office
EQAO

- With an **elbow partner** from your team, look at Grade 9 EQAO Released Assessment Questions for Applied and/or Academic.
- Identify questions that you believe would be a struggle for your marker students.
- Discuss strategies that could help a struggling student answer the question.
- Feel free to attempt these problems.

EQAO Test Deconstruction

Education Quality and Accountability Office
EQAO

- Look For:
  - Unfamiliar terminology / wording
  - Unfamiliar topics
  - Tasks related to the student learning need in your classroom

WRITE ON THE TEST

EQAO School Data: Making Predictions

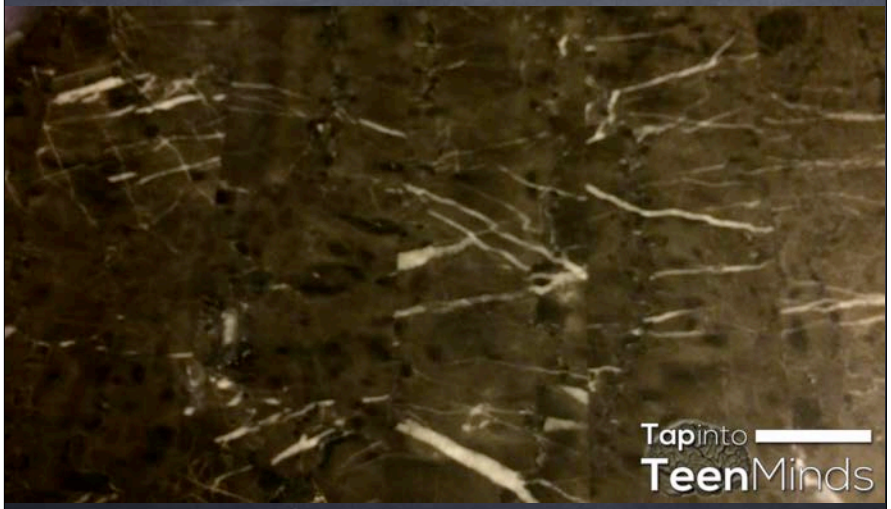
- Prior to looking at your school specific EQAO Data, select **five (5) former students** and make predictions for their:
  - Grade 9 EQAO Result, and
  - Grade 9 Overall Course Mark.
- How close was your prediction?

EQAO School Data: Analyse Data

- What does the data tell you about the student learning needs in your school? … classroom?
- Does the data support the student learning need selected for your collaborative inquiry question?
- Should the focus of your inquiry be:
  - … more specific?
  - … less specific?

LUNCH

Snipping Straws



Snipping Straws

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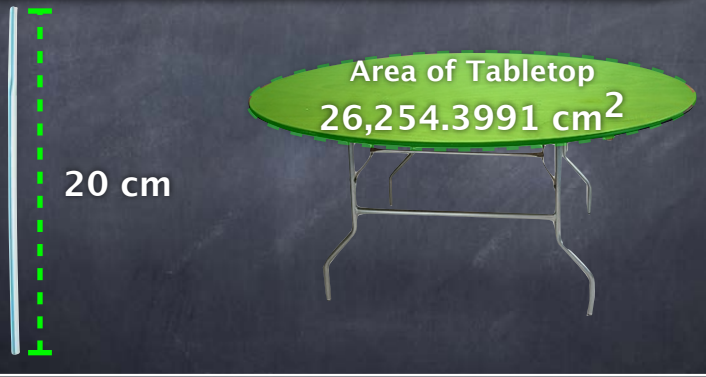
How long is your piece of snipped straw?

TapintoTeenMinds.com



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Cookie Cutter

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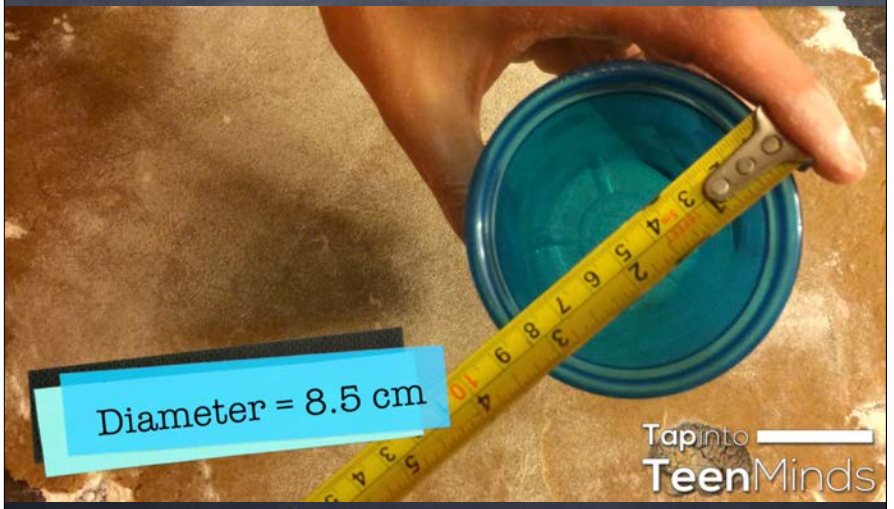

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$A = \pi r^2$

Why do we need π?

Discuss & Explore With A Partner

Why do we need π?

$A = \pi r^2$

Why do we need π?

$A = \pi r^2$

Wonderings:

What percentage of the square is green?

What percentage is purple?

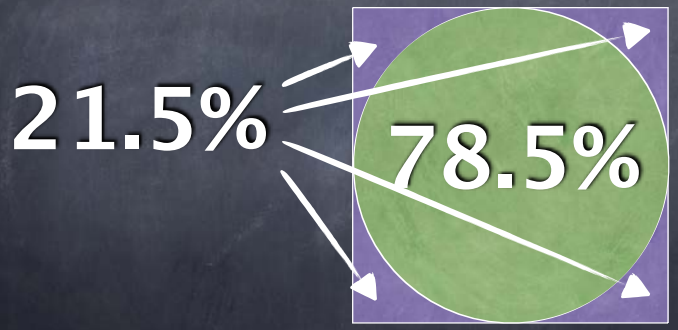
Why do we need π?

$A = \pi r^2$

DOES A RELATIONSHIP EXIST?

Why do we need π?

$A = \pi r^2$



Why do we need π?

$A = \pi r^2$

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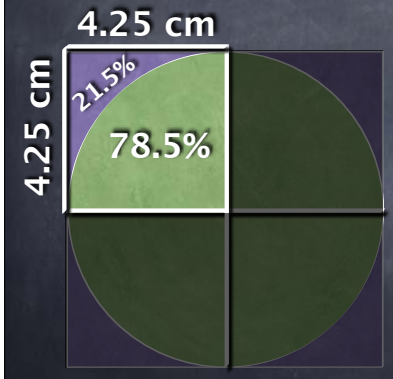


How Does This Proportion Relate to π?

$A = (4.25)^2(0.785)4$

$A = (4.25)^2(3.14)$

$A = \pi(4.25)^2$

Why do we need π?

$A = \pi r^2$

How Does This Proportion Relate to π?

$A = (4.25)^2(0.785)(4)$

$A = 14.17(4)\ cm^2$

$A = 56.72\ cm^2$

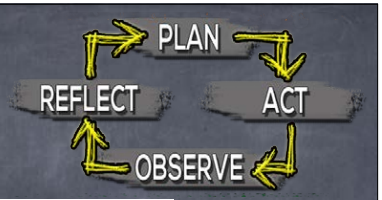
Why Area?

Making Connections in Math From 7-9 in Measurement: Area

Grade 7	Grade 8	Grade 9 Applied
– research and report on real-life applications of **area** measurements (e.g., building a skateboard; painting a room).	– represent the multiplication and division of fractions, using a variety of tools and strategies (e.g., use an **area** model to represent 1/4 multiplied by 1/3);	– describe the relationship between the algebraic and geometric representations of a single-variable term up to degree three [i.e., length, which is one dimensional, can be represented by x; **area**, which is two dimensional, can be represented by (x)(x) or x2; volume, which is three dimensional, can be represented by (x)(x)(x), (x2)(x), or x3];
– solve problems that require conversion between metric units of **area** (i.e., square centimetres, square metres) (Sample problem: What is the ratio of the number of square metres to the number of square centimetres for a given **area**? Use this ratio to convert 6.25 m2 to square centimetres.);	– estimate, and verify using a calculator, the positive square roots of whole numbers, and distinguish between whole numbers that have whole-number square roots (i.e., perfect square numbers) and those that do not (Sample problem: Explain why a square with an **area** of 20 cm2 does not have a whole-number side length.).	– determine the maximum **area** of a rectangle with a given perimeter by constructing a variety of rectangles, using a variety of tools (e.g., geoboards, graph paper, toothpicks, a pre-made dynamic geometry sketch), and by examining various values of the **area** as the side lengths change and the perimeter remains constant;
– solve problems involving the estimation and calculation of the **area** of a trapezoid;	– solve problems that require conversions involving metric units of **area**, volume, and capacity (i.e., square centimetres and square metres; cubic centimetres and cubic metres; millilitres and cubic centimetres) (Sample problem: What is the capacity of a cylindrical beaker with a radius of 5 cm and a height of 15 cm?);	– determine the minimum perimeter of a rectangle with a given **area** by constructing a variety of rectangles, using a variety of tools (e.g., geoboards, graph paper, a premade dynamic geometry sketch), and by examining various values of the side lengths and the perimeter as the **area** stays constant;
– estimate and calculate the **area** of composite two-dimensional shapes by decomposing into shapes with known **area** relationships (e.g., rectangle, parallelogram, triangle) (Sample problem: Decompose a pentagon into shapes with known **area** relationships to find the **area** of the pentagon.);	– determine, through investigation using a variety of tools (e.g., cans and string, dynamic geometry software) and strategies, the relationships for calculating the circumference and the **area** of a circle, and generalize to develop the formulas (Sample problem: Use string to measure the circumferences and the diameters of a variety of cylindrical cans, and investigate the ratio of the circumference to the diameter.);	– solve problems that require maximizing the **area** of a rectangle for a fixed perimeter or minimizing the perimeter of a rectangle for a fixed **area** (Sample problem:You have 100 m of fence to enclose a rectangular **area** to be used for a snow sculpture competition. One side of the **area** is bounded by the school, so the fence is required for only three sides of the rectangle. Determine the dimensions of the maximum **area** that can be enclosed.).

Grade 7	Grade 8	Grade 9 Applied
– determine, through investigation using a variety of tools (e.g., nets, concrete materials, dynamic geometry software, Polydrons), the surface **area** of right prisms;	– solve problems involving the estimation and calculation of the circumference and the **area** of a circle;	– solve problems involving the **areas** and perimeters of composite two-dimensional shapes (i.e., combinations of rectangles, triangles, parallelograms, trapezoids, and circles) (Sample problem: A new park is in the shape of an isosceles trapezoid with a square attached to the shortest side.The side lengths of the trapezoidal section are 200 m, 500 m, 500 m, and 800 m, and the side length of the square section is 200 m. If the park is to be fully fenced and sodded, how much fencing and sod are required?);
– solve problems that involve the surface **area** and volume of right prisms and that require conversion between metric measures of capacity and volume (i.e., millilitres and cubic centimetres) (Sample problem: An aquarium has a base in the shape of a trapezoid. The aquarium is 75 cm high. The base is 50 cm long at the front, 75 cm long at the back, and 25 cm wide. Find the capacity of the aquarium.).	– determine, through investigation using a variety of tools and strategies (e.g., generalizing from the volume relationship for right prisms, and verifying using the capacity of thin-walled cylindrical containers), the relationship between the **area** of the base and height and the volume of a cylinder, and generalize to develop the formula (i.e., Volume = **area** of base x height);	
	– determine, through investigation using concrete materials, the surface **area** of a cylinder (Sample problem: Use the label and the plastic lid from a cylindrical container to help determine its surface **area**.);	
	– solve problems involving the surface **area** and the volume of cylinders, using a variety of strategies (Sample problem: Compare the volumes of the two cylinders that can be created by taping the top and bottom, or the other two sides, of a standard sheet of paper.).	
	– determine, through investigation using a variety of tools (e.g., dynamic geometry software, concrete materials, geoboard), relationships among **area**, perimeter, corresponding side lengths, and corresponding angles of similar shapes (Sample problem: Construct three similar rectangles, using grid paper or a geoboard, and compare the perimeters and **areas** of the rectangles.);	

Learning Goal & Task Redesign



Grade 7 - Number Sense and Numeration
Curriculum Expectation:

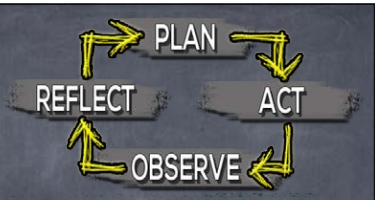
- Demonstrate an understanding of rate as a comparison, or ratio, of two measurements with different units (e.g., speed is a rate that compares distance to time and that can be expressed as kilometres per hour);

Learning Goal:	Success Criteria:

Task Redesign and Strategies:

- What does the task look like? Can we make it visual?
- Does it have a low floor to provide an entry point for all learners?
- Does it have a high ceiling offering opportunities to extend concepts?

Grade 7: Number Sense and Numeration



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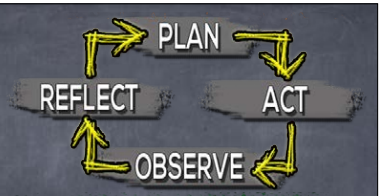

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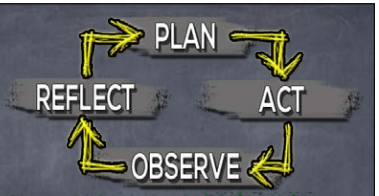
Grade 7: Number Sense and Numeration



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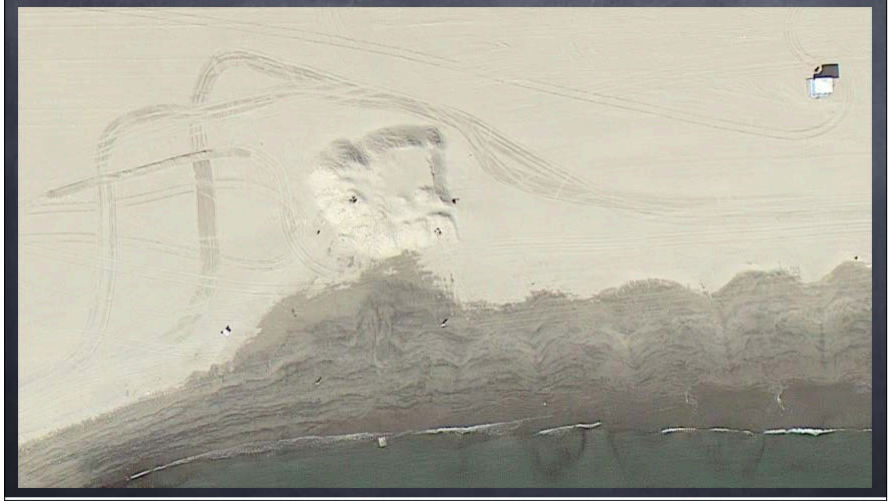
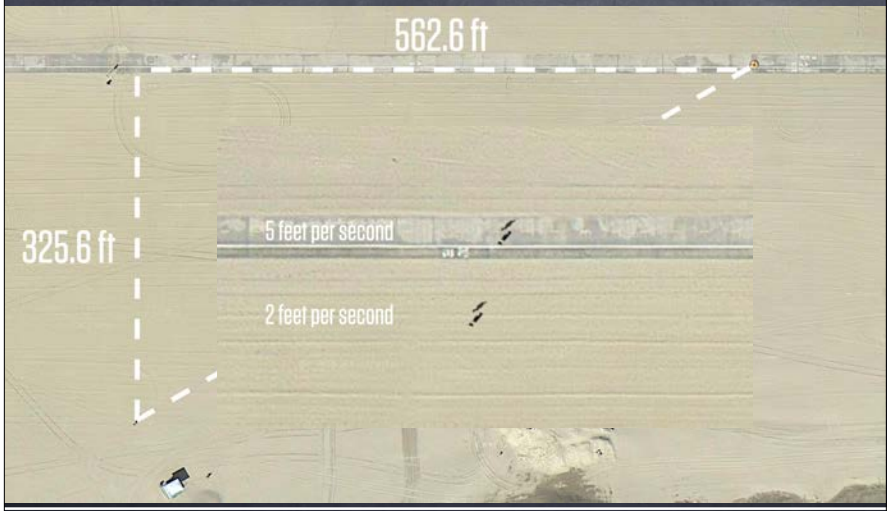
Taco Cart – Act 1



Taco Cart – Act 2



Taco Cart – Act 3

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Taco Cart Shared By: Dan Meyer

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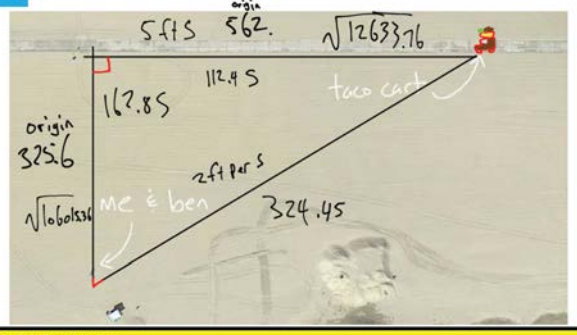


Write the Question:
Which is faster

What information do we need?

Speeds 4.5 m

Pearce	ben
275.3 / 60	324.5 / 60

5.4 m

$a^2+b^2=c^2$

$325.6^2+562.6^2=c^2$

$106015.36+316518.76=c^2$

$422534.12=c^2$

$650.026=c$

650.026÷2=325.013

325.6÷2=162.8

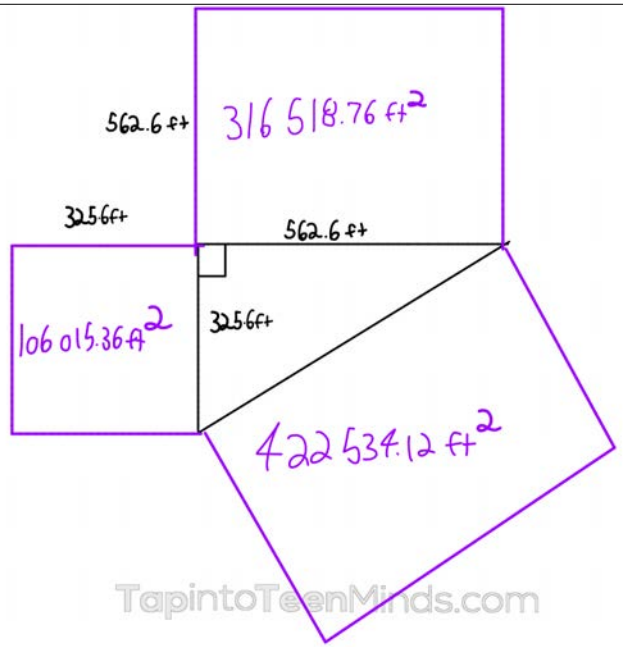
562.6÷5=112.52

162.8+112.52=275.32

"Me" 275.325 secs

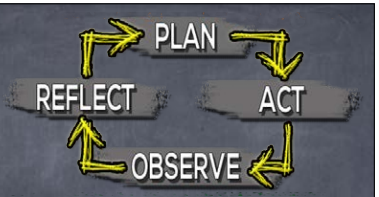
Ben 325.013 secs

It is shorter to go on the road.



Pythagorean Theorem

Next Steps



- What are **next steps** for you and your MYCI Team as we begin planning for next year?
- If your school becomes MYCI "Alumni" in September, what can you do as a team to continue the collaboration amongst your team?
- How can Justin or Kyle help you and your team continue the momentum?

Exit Survey

- Slides From Learning Fair Also Available

http://kylep.ca/lfair

- All Team Members Should Complete the Exit Survey

Thank YOU for another great year!

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