Unpacking the Grades 4-6 Math Collaboration Time

- Find your Room Number in the shared slides.
- Find your Organizing Idea in your numbered outcomes document and its related outcomes in our current Grade 7 Program of Studies.
- One person in the group to type directly into the document - EVERYONE will get the final version

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- What, from the Current Grade 7 Outcomes, have been covered?
- What still needs to be covered?
- Review what your colleagues have suggested. Feel free to add or take away any material. Add another slide if needed.
  Note: You will need to look beyond just grade 6 to understand what students will have learned BUT Grade 6 is your immediate impact!
- Elect a recorder & a speaker who will summarize for the group- remember, your group is the EXPERT on this Organizing Idea!

Type directly into the document

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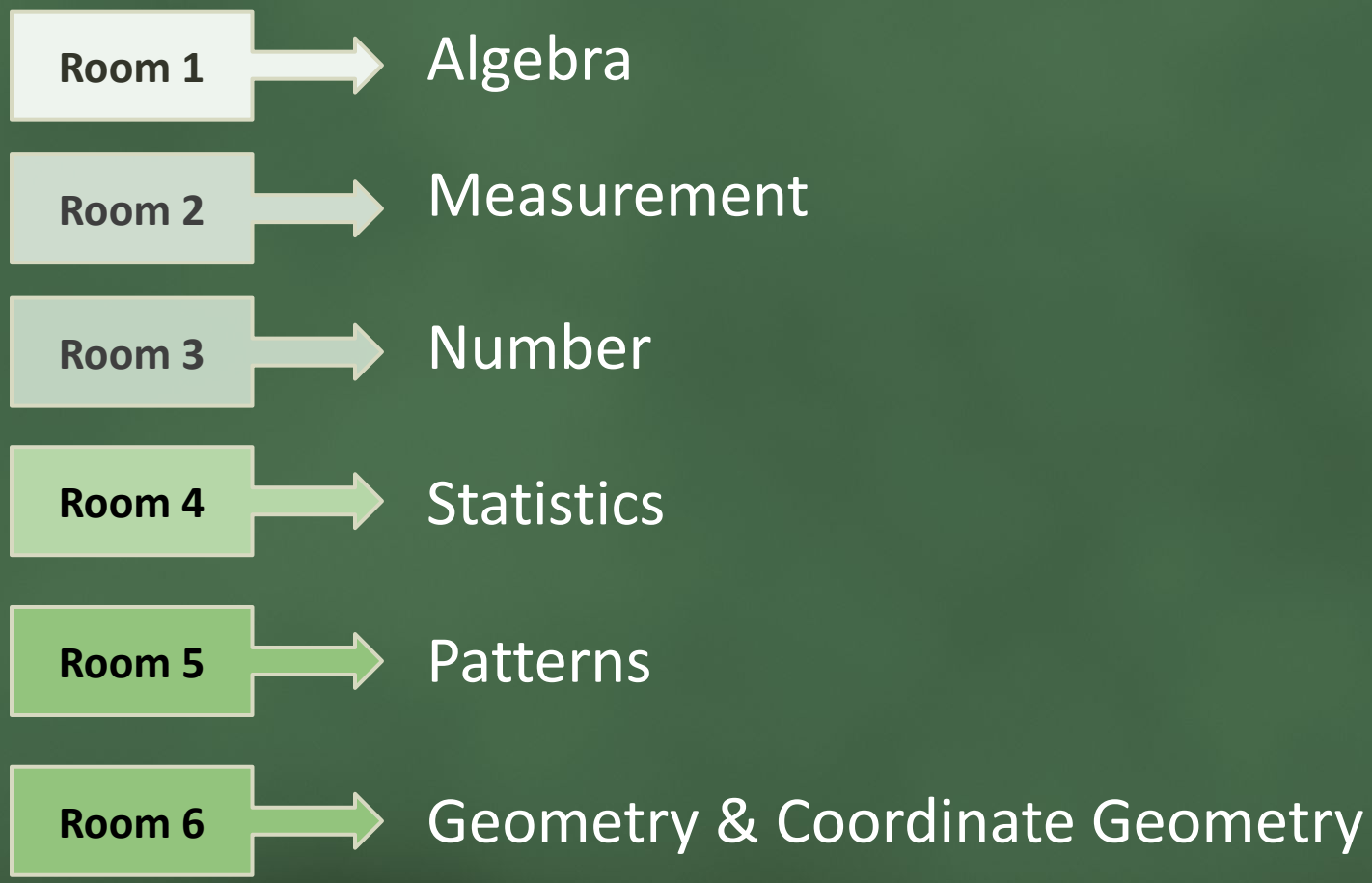
Room Number



•Room 1 - ALGEBRA

Already Completed

- Gr. 4 - A1.2 - represent and apply equality in multiple ways (current PR 3 in Gr7)
- Gr. 4 - A1.1 - Order of Operations all 4 operations (concretely and symbolically)
- Gr.5 - A1.2 - interpret algebraic expressions (current PR 5 in Gr 7)
- Gr. 5 - A1.3 (current PR 7 in Gr 7)
- Gr. 5 - A1.1 - Order of operations with parentheses
- define and identify variable, constant term, term, numerical coefficient, expression and equation (review)
- Gr. 6 - A1.1 order of operations with exponents
- Model and solve linear equations and expressions
- Expressions vs equations
- Grade 5 & 6 really focus on the 'why', setting the table to solve
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Still Needs to Be Done Gr 7

- Current PR4
- Looking at Gr 5 & 6 it 'seems everything is in place' for Gr 7 - student readiness
- Linear definition
- using concrete and pictorial representations

•Room 1 - ALGEBRA

Already Completed	Still Needs to Be Done Gr 7
• T	• This is a placeholder for item one.

•Room 2 - MEASUREMENT

Already Completed	Still Needs to Be Done Gr 7

- Gr 3 - introduction to linear units and right angles
- Gr 4 - area introduction - spatial based
- estimating, using squares within squares to model squared units on cm, m and km
- area of rectangles - l x w
- circle, angles within a circle, learning how to use a protractor
- Gr 5 - rectangles area extended - no calculator, extend square units
- types of lines
- Gr 6 - parallel vs perpendicular
- area of parallelograms and triangles includes composite 2D shapes modelled concretely and then formulas applied symbolically
- Volume of prisms (Gr 8) and rearranging the formula
- Measurement is its own organizing idea (own strand)

- Circles - circumference, radius, diameter
- Area of circles
- Need to teach the protractor in the coming year because they have not gone through the new grade 4 yet.
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- Possibly review volume to support retention from Gr 6 for Gr 8 volume

•Room 2 - MEASUREMENT

Already Completed	Still Needs to Be Done Gr 7
• This is a placeholder for item one.	• This is a placeholder for item one.

•ROOM 3 - NUMBER

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Already Completed

- Gr4 - mastery of 12 x 12
- Gr4 - adding and subtracting decimals to hundredths (Models, concretely, symbolically)
- Gr 5 -adding and subtracting decimals to thousandths
- Gr. 4 - compare and Order Number (4N1)
- Gr 4 - 4N2 - all three skills taught in Gr 7
- Gr 4 - 4N4 multiply/divide natural numbers within 10 000
- Gr 5 - 5N4 - multiply and divide natural numbers within 100 000
- Gr 6 - multiplying and dividing decimals - by natural number - limit on size of number 23.4 x 16
- Gr 4 - factors, prime and composite numbers (concretely, symbolically)
- Grade 5 - divisibility rules - 0,2,3,5,10
- Gr 6 -6N3 - finding factors
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Still Needs to Be Done in Gr 7

- Divisibility rules 4, 6, 8 ,9
- Multiplying and dividing without technology (included in 4-6, some 7 says technology when appropriate)
- division and multiplication by decimal numbers 23.4 x 1.6
- N4 - relating terminating and repeating decimals to fractions
- N7 - comparing and ordering a variety of fractions, decimals, percents, and whole numbers (? some done in earlier grades?)

•Room 3 - NUMBER

Already Completed	Still Needs to Be Done in Gr 7
• Gr 6 - 6N1, 6N2 - Integers, +/- addition and subtraction (concretely (**modelling**), symbolically?) • inverse operations • exponents (gr. 8/9)Gr. 4 -4N5.1 - Equivalent fractions • Gr 5 - N5.1 - Improper fractions and adding/subtracting like denominators • Gr 6. - N6 - adding/subtracting unlike denominators • Gr.6 - N7 - multiplying fractions by a natural number • Gr. 6 - Ratios and Rates • Gr. 6 - Percent of a Number	• (Gr. 8) Dividing fractions • (gr. 8) Multiplying a fraction by a fraction • (Gr. 8) Percentages above 100% • Converting between fraction, decimal, percent (? Some done in earlier grades?) • Adding and subtracting fractions (including mixed and improper) with denominators that don't have common factors • N6 - Focus on add/sub integers without models

•Room 3 - NUMBER

Already Completed	Still Needs to Be Done Gr 7
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•Room 4 - STATISTICS

Already Completed	Still Needs to Be Done
• Identifying Mode • expressing probabilities/frequencies • starting sample space (one independent event) • collect and analyze probability data (one event) • new language • shift from focusing on theoretical??? probability to experimental??? probability???	• median, mean, range of data sets • effect of outliers • sample space with two independent events • probability data (two events) • Relative frequency - New term • Expected frequency replaces experimental probability?

•Room 4 - STATISTICS

Already Completed

- 4ST1.1/1.2 Students evaluate the use of scale in graphical representations of data.
  - (1.1) formulating statistical questions, collecting data, representing data, interpreting data
  - (1.2) Many-to-one correspondence is the representation of many objects using one object or interval on a graph. Common graphs include: pictographs, bar graphs, dot plots
- 5ST1.1/1.2 Students analyze frequency in categorical data.
  - Frequency compared across categories
  - The mode is the higher frequency
  - Data collection (closed-list and open-ended questions)
  - Representation of frequency using bar graphs, dot plots and stem-and-leaf plots
- 6ST1.1 Students investigate relative frequency using experimental data.
- 6ST1.2 Students investigate relative frequency using experimental data.
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-

Still Needs to Be Done

Gr. 7 Learner Outcomes

- 7S1 - Demonstrate an understanding of central tendency and range by: • determining the measures of central tendency (mean, median, mode) and range • determining the most appropriate measures of central tendency to report findings.
- 7S2 - Determine the effect on the mean, median and mode when an outlier is included in a data set.
- 7S3 - Construct, label and interpret circle graphs to solve problems.
- 7S4 - Express probabilities as ratios, fractions and percents.
- 7S5 - Identify the sample space (where the combined sample space has 36 or fewer elements) for a probability experiment involving two independent events.
- 7S6 - Conduct a probability experiment to compare the theoretical probability (determined using a tree diagram, table or other graphic organizer) and experimental probability of two independent events.

New concepts to the coming grade 7 students?

- Relative Frequency - New term
-

•Room 5 - PATTERNS

Already Completed

- Gr 4 - create and explain increasing and decreasing sequences; represent concretely and pictorially
- sequences - arithmetics, geometric, triangular, square & Fibonacci
- skip counting - multiplication as a sequence (mastery to 12 x 12)
- Table of values - express relationship (not an 'ordered pair'
- Gr 5 - 1 to 1 correspondence - table of values - place on a grid
- describe a sequence as a straight line
- describe a rule for the correspondence between the graph and an arithmetic sequence
- write an algebraic expression from a graph (1 operation)
- determine missing term in a sequence to give position
- solve problems involving arithmetic sequences

Still Needs to Be Done Gr 7

- What has been covered is:
  - Gr 7 PR S.O 1, 2, 7
  - Gr 8 PR S.O 1
  - Gr 9 PR S.O 1, 2

•Room 5 - PATTERNS

Already Completed

- Gr 6 - identify dependent and independent variables and describe the rule that relates them
- introduce 'functions'
- represent values as functions in tables and graphs
- write expressions that represent a function
- recognize various representations
- determine dependent variable given the independent variable and vice versa
- solve problem involving functions.

Still Needs to Be Done Gr 7

- review but also adjust language to new!
  - eg) Function, independent, dependent variables
- Linear equations in real-life situations (how it is applied)
- Describing pattern rules **Orally** (as opposed to written)
- Analyzing graphs to draw conclusions
- Demonstrate understanding of preservation of equality by modelling concretely, pictorially, and symbolically to solve equations
- Difference between expression and equation
- Model and solve, concretely, pictorially and symbolically, problems that can be represented by one-step linear equations of the form $x + a = b$, where a and b are integers

•Room 5 - PATTERNS

Already Completed	Still Needs to Be Done
• This is a placeholder for item one.	• Model and solve, concretely, pictorially and symbolically, problems that can be represented by linear equations of the form: • • ax + b = c • • ax = b • • = x b a , a ≠ 0 where a, b and c are whole numbers.

•Room 6 - GEOMETRY

Already Completed

- Gr 4D1.1 - supplementary and Complementary angles (gr. 9, 10-3))
- know how to use a protractor (but this is not part of Geometry!)
- quadrilaterals - 5 types - hierarchy
- triangles by side (scalene, isosceles, equilateral) and angles (right, obtuse, acute)
- Gr 5 - symmetry 2D/3
- rotational symmetry - order of rotation (gr 9)
- regular polygon rotation (including circles)
- Gr 6 - tessellations (optional gr 8)
- Congruence / symmetry
- know parallel and perpendicular

Still Needs to Be Done Gr 7

- Still need to teach constructions (perpendicular and parallel line segments, perpendicular bisectors and angle bisectors)
- Recommendation for grade 7 teachers
  - review supplementary and complementary angles, as well as lines and triangles to support the Circle Geometry Unit in gr 9
  - Rotational Symmetry
  - Include real world applications for example with nature
  - do not assume students will have all the knowledge as some will have only had new gr 6 curriculum
  - Less time can be devoted to Geometry as students have seen/worked with these outcomes already

•Room 6 - GEOMETRY

Already Completed	Still Needs to Be Done
• This is a placeholder for item one.	• This is a placeholder for item one.

•Room 6 -Coordinate Geometry

Already Completed	Still Needs to Be Done in Gr 7

- 4G1.2 Translations, Rotations and Reflections
- Gr 5 - coordinate grids and describing locations
- Order of Rotation with circles, Symmetry (gr 9)
- Symmetry of polygons
- introduce grid outside of x and y axis initially
- introduce coordinate grid
- describe locations
- learn about ordered pair and x and y axis
- model and describe location of polygon and its vertices
- Gr 6 - relate cartesian planes to number lines
- cartesian plane, quadrants, ordered pairs extended
- create image of a polygon, identifying vertices using transformations (translations, reflections and rotations) in all 4 quadrants

Covered all Gr 7

Recommendation for gr 7 teachers:

Less time can be devoted to Coordinate Geometry as students have seen/worked with these outcomes already

•Room 6 - COORDINATE GEOMETRY

Already Completed	Still Needs to Be Done
• This is a placeholder for item one.	• This is a placeholder for item one.

•Room ___ & OI

Already Completed	Still Needs to Be Done
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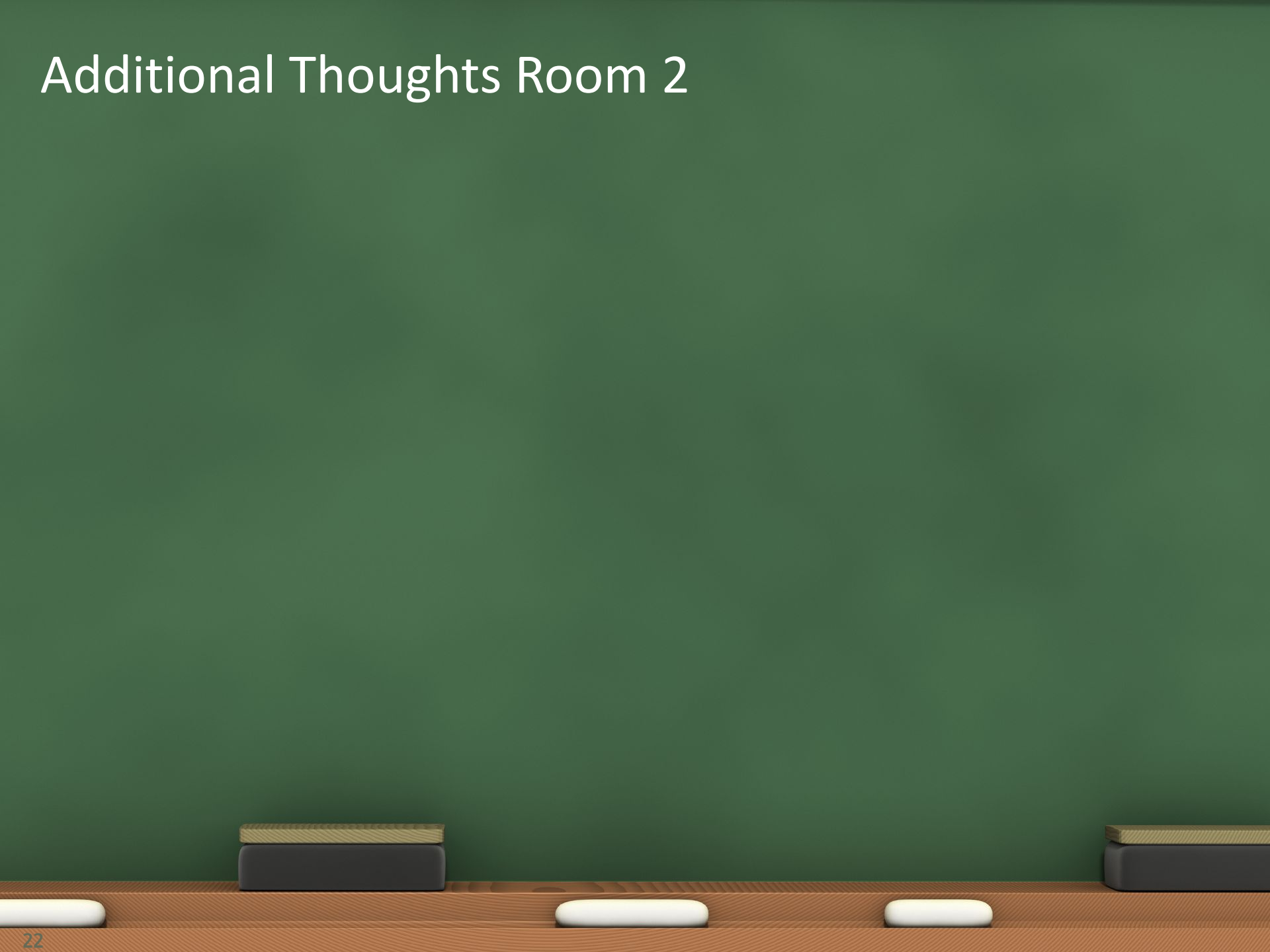
Additional Thoughts Room 1

Additional Thoughts Room 2



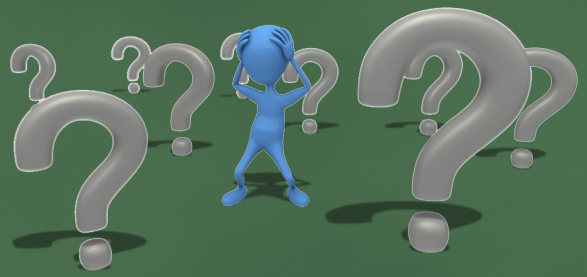
Additional Thoughts Room 3

Additional Thoughts Room 4

Additional Thoughts Room 5

Additional Thoughts Room 6

•Questions? Need More Information?



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