Math Year Plans - FDNS / PC 10
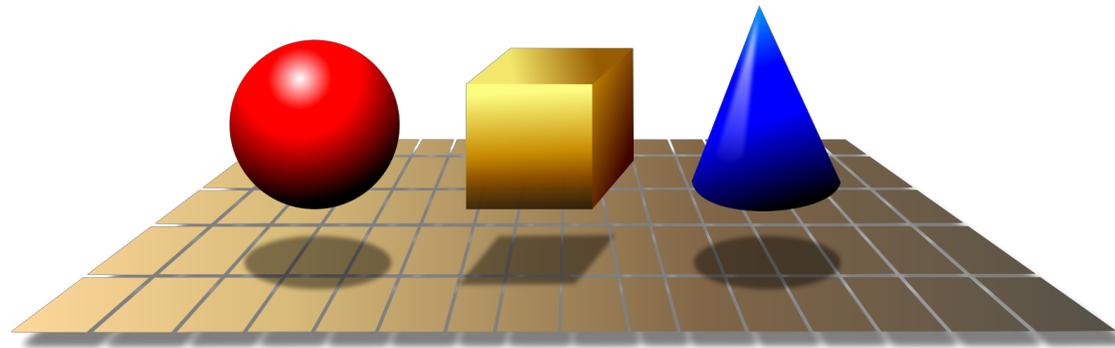
March 19th, 2015

EMTH 450

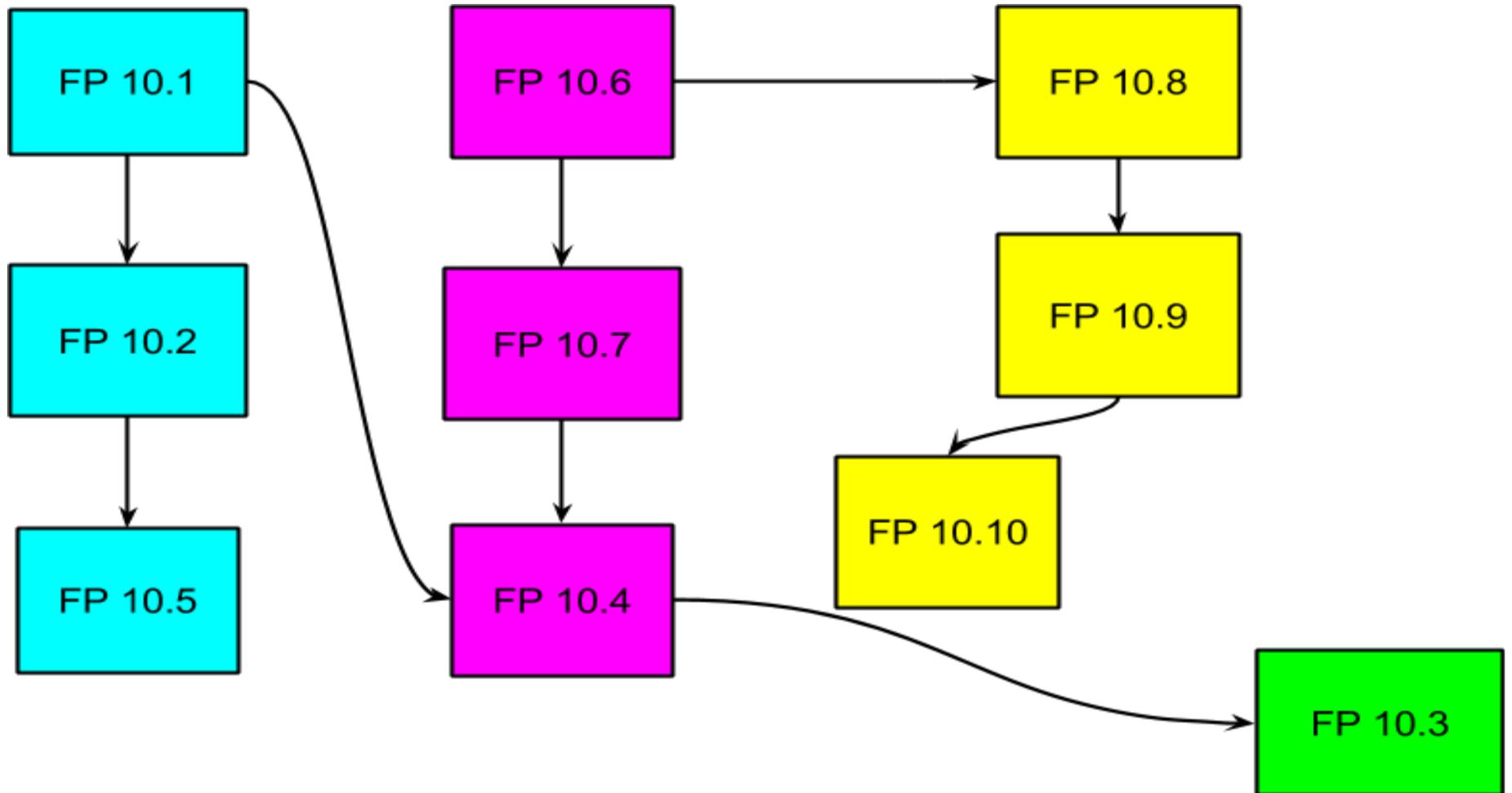David

Hillary

Jennie

Foundations and Pre-calculus 10

Map

Reasoning

We have decided to start with the Teal Strand which is the factoring component of this course because you need to understand factoring before we can move into the trigonometric portions. We have decided to do this whole strand because it is all related to each other. Another reason we decided to start with the Teal Strand is because it links in with the purple strand. This is also the strand that starts the linking/connection to the other strands.

Then we move onto the purple strand because it goes along with the geometry unit. Geometry and trigonometric portions go hand in hand so it is important to do these two strands together so the students can transfer the knowledge they just learned about factoring in order to be able to accomplish the geometry and trigonometry questions.

We have decided to do the green strand next because it doesn't relate to anything and it is on its own. However, the green strand does connect with the purple strand which is why we have chosen to do it after the purple strand. This strand is a build off of the geometry sections and the only addition is now it is dealing with the SI and imperial measurement system.

Finally we decided to do linear relations which is the yellow strand because it maps with the geometry unit. They need to take the information that they have already learned in the green strand in order to apply and be successful in the yellow strand!

We have decided to do it in this order because as it shows in the map, going from left to right the right column connects to the column on the left beside it. So in order to be able to successfully complete the column on the right you need to have the previous knowledge from the strand to the left of it.

Teal Strand: Factoring

FP10.1 (#1)

Demonstrate understanding of factors of whole numbers by determining the:
- ○ prime factors
- ○ greatest common factor
- ○ least common multiple
- ○ principal square root
- ○ cube root.
  [CN, ME, R]

FP10.2 (#2)

Demonstrate understanding of irrational numbers in both radical (including mixed radical) and exponent forms through:

- ○ representing
- ○ identifying
- ○ simplifying
- ○ ordering
- ○ relating to rational numbers
- ○ applying exponent laws.
  [C, CN, ME, PS, R, V]

FP10.5 (#3)

Demonstrate understanding of the multiplication and factoring of polynomial expressions (concretely, pictorially, and symbolically) including:

- ○ multiplying of monomials, binomials, and trinomials
- ○ common factors
- ○ trinomial factoring
- ○ relating multiplication and factoring of polynomials.
  [C, CN, R, V]

Purple Strand: Geometry

FP10.6 (#4)

Expand and apply understanding of relations and functions including:

- ○ relating data, graphs, and situations
- ○ analyzing and interpreting
- ○ distinguishing between relations and functions.
  [C, CN, R, T, V]

FP10.7 (#5)

Demonstrate, with and without the use of technology, understanding of slope (concretely, pictorially, and symbolically) with respect to:
- ○ line segments and lines
- ○ rate of change
- ○ ratio of rise to run
- ○ parallel lines
- ○ perpendicular lines.
  [PS, R, V]

FP10.4 (#6)

Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles. [C, CN, PS, R, T, V]

Green Strand: Unit Conversion

FP10.3 (#10)

Demonstrate understanding of SI and imperial units of measurement including:
- ○ linear measurement
- ○ surface area of spheres, and right cones, cylinders, prisms, and pyramids
- ○ volume of spheres, and right cones, cylinders, prisms, and pyramids
- ○ relationships between and within measurement systems.
  [C, CN, ME, PS, R, V]

Yellow Strand: Linear Relations

FP10.8 (#7)
Demonstrate understanding of linear relations including:
- ○ representing in words, ordered pairs, tables of values, graphs, function notation, and equations
- ○ determining characteristics including intercepts, slope, domain, and range
- ○ relating different equation forms to each other and to graphs.
  [C, CN, PS, R, T, V]

FP10.9 (#8)
Demonstrate understanding of the writing and application of equations of linear relations, given:
- ○ a graph of a relation
- ○ a point that satisfies a relation and the slope of the relation
- ○ two distinct points that satisfy a relation
- ○ a point that satisfies the relation and the equation of a line parallel or perpendicular to the relation.
  [CN, PS, R, V]

FP10.10 (#9)
Solve problems that involve systems of linear equations in two variables, graphically and algebraically.[CN, PS, R, T, V]