HMM Description

HMM Fundamental Skills

- Although this assessment is dubbed as "Fundamental", it isn't necessarily easier than the HMM assessments. Instead, it provides a preview to the other HMM assessments, like HMM Linear and HMM Quadratic.
- **Who should take this assessment?** Students with a history of struggling in Algebra 1 heading into Algebra 2. HMM Fundamentals provides a nice refresh and review of Algebra 1.

HMM Linear

- **Covers:** Function operations, composition of linear functions, piecewise, graphing piecewise, plotting inverse,
  three equation systems, real-world applications of inequalities, linear programming.
- **Who should take this assessment?** Students with a history of struggling in Algebra 1 heading into Algebra 2. **If the student is willing in come into the center for a long period of time**, this assessment will work well to prepare them for Algebra 2.

HMM Quadratic

- **Covers:** Conjugates, imaginary numbers, interval notation, parts of a parabola, writing equations of parabolas,
  quadratic inequalities, interpreting the vertex, quadratic modeling, quadratic problem solving.
- **Who should take this assessment?** Students with a history of struggling in Algebra 1 heading into Algebra 2. **If the student is willing in come into the center for a long period of time**, this assessment will work well to prepare them for Algebra 2.

> HMM Linear and HMM Quadratic should be used in conjunction if a student is willing to spend a sizable amount of time preparing for Algebra 2.

HMM Advanced I

- **Covers:** Rational exponents, simplifying radicals, function transformations, exponential graphs, sketching absolute
  value, sketching square root, sketching rational functions, simplifying rational expressions, even and odd
  functions, graphing circles, combined variation, polynomial division, function transformations,
  exponential equations, exponential modeling.

- This assessment covers a respectable chunk of New Trier Algebra 2 3L curriculum. All concepts on HMM Advanced 1 should be covered by New Trier Algebra 2 3L curriculum, but NT may cover concepts not listed in HMM Advanced 1.
- **Who should take this assessment?** Any student that is willing to spend session time working on Mathnasium material during their Algebra 2 school year. This assessment will likely be used for first semester NT students.

HMM Advanced II

- **Covers:** Conic sections, complex numbers, logarithms, exponential equations and inequalities, radical equations
  and inequalities, rational equations and inequalities, graphing rational equations, asymptotes, end
  behavior, continuity, roots, extrema, multiplicity, average rate of change, Decartes' Rule of Signs,
  Rational Root Theorem.
- This assessment does cover a few NT Pre-Calculus topics, but mainly targets advanced NT Algebra 2 concepts.
- **Who should take this assessment?** Any student that has completed HMM Advanced I or proficient in HMM Advanced I. This will likely be used for second semester NT students.

> If this assessment is assigned, please exclude: Questions 1, 2, 3, 4, 5, 6.

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                                      │  HMM Linear  │  ═══════▶    │ HMM Quadratic│
                                      └──────────────┘              └──────────────┘
            Longer
         time frame    ═══▶

┌──────────────┐
│ Algebra 2 student │
│  with history of  │
│ struggling in Algebra. │
└──────────────┘
                                      ┌──────────────┐
            Shorter                   │ HMM Fundamental │
         time frame    ═══▶           │     Skills      │
                                      └──────────────┘


┌──────────────┐                      ┌──────────────┐              ┌──────────────┐
│ Algebra 2 student │  ═══════▶        │ HMM Advanced I │  ═══════▶   │ HMM Advanced II │
│   looking for     │                 └──────────────┘              └──────────────┘
│ reinforcement during │
│  the school year  │                        First                        Second
└──────────────┘                            Semester                     Semester
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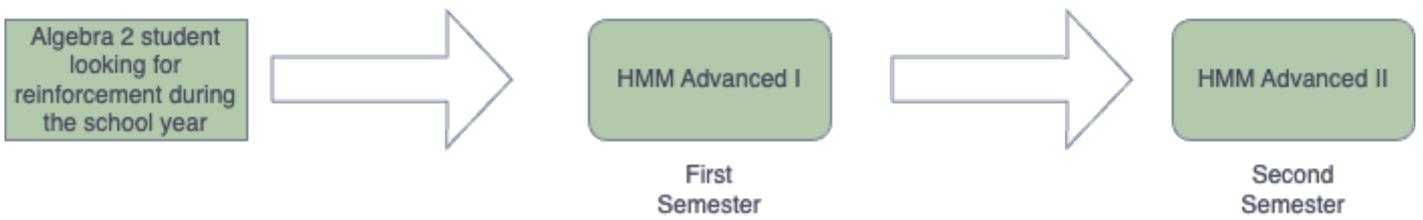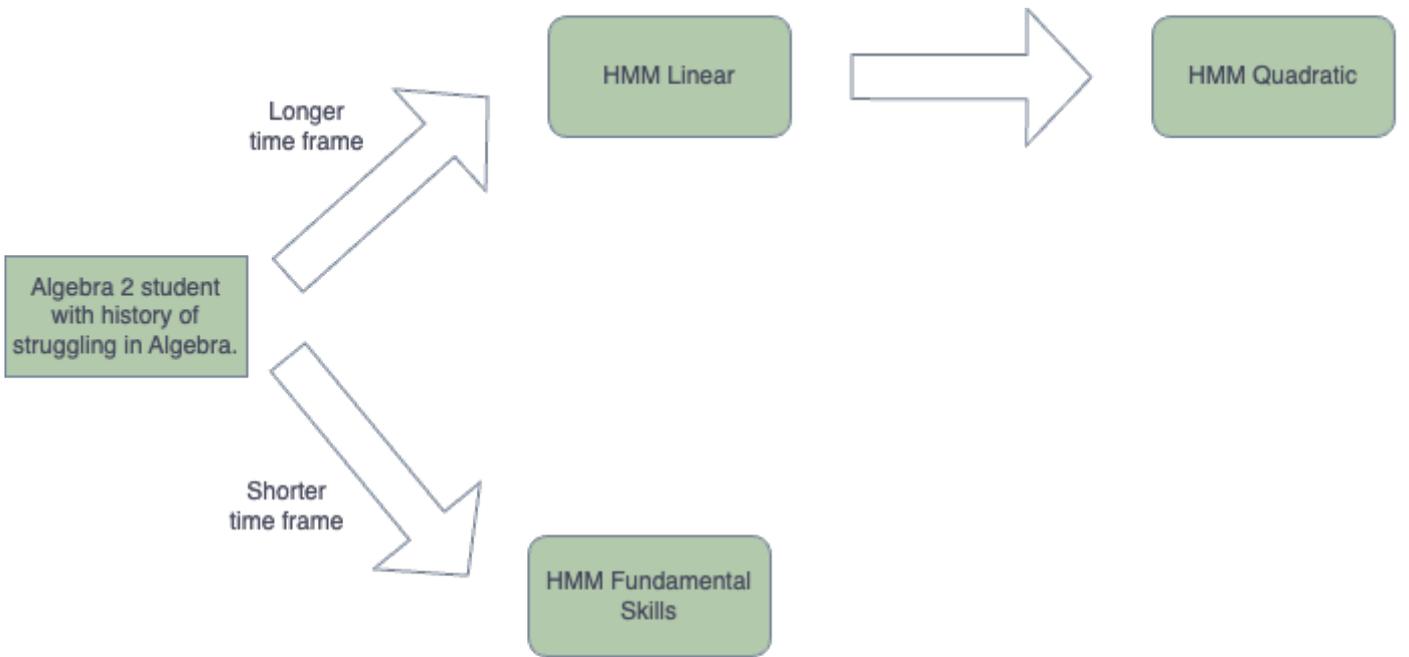
Revision #6
Created 22 July 2024 19:51:40 by edisonsun
Updated 31 July 2024 02:48:40 by edisonsun