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| **Essential Understandings** | **Crosscutting Concepts from  *High School Mathematics  Reimagined, Revitalized, and Relevant*** |
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| **Functions** |  |
| Big Idea 1: The Function Concept |  |
| Big Idea 2: Covariation and Rate of Change |  |
| Big Idea 3: Families of Functions |  |
| Big Idea 4: Combining and Transforming Functions |  |
| Big Idea 5: Multiple Representations of Functions |  |
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| **Geometry** |  |
| Big Idea 1: Working with diagrams is essential to geometric thinking. |  |
| Big Idea 2: Geometry is about working with variance and invariance, despite appearing to be about theorems. |  |
| Big Idea 3: Working *with* and *on* definitions is central to geometry. |  |
| Big Idea 4: A written proof is the endpoint of the process of proving. |  |
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| **Proof and Proving** |  |
| Big Idea 1: Proof is part and parcel of doing mathematics and should be a regular and ongoing part of the learning of mathematics. |  |
| Big Idea 2: A proof is a specific type of mathematical argument, which is a connected sequence of deductive, logical statements in support of or against a mathematical claim. |  |
| Big Idea 3: A proof demonstrates the truth of a statement beyond any doubt for all possible cases., |  |
| Big Idea 4: A proof is not an argument based on authority, perception, popular consensus, intuition, probability, or examples. |  |
| Big Idea 5: Proof has many different roles in mathematics. |  |
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| **Statistics** |  |
| Big Idea 1: Data consists of structure and variability. |  |
| Big Idea 2: Distributions describe variability. |  |
| Big Idea 3: Hypothesis tests answer the question, "Do I think this could have happened by chance?" |  |
| Big Idea 4: The way in which data are collected matters. |  |
| Big Idea 5: Evaluating an estimator involves considering bias, precision, and the sampling method. |  |
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