

### Big Idea I: Creativity

- LO 1: SC use computing tools and techniques to create artifacts.
- LO 2: SC analyze computational artifacts.
- LO 3: SC use computing tools and techniques for creative expression.
- LO 4: SC use programming as a creative tool.

### Big Idea II: Abstraction

- LO 5: SC describe the combination of abstractions used to represent data.
- LO 6: SC explain how binary sequences are used to represent digital data.
- LO 7: SC develop an abstraction.
- LO 8: SC use multiple levels of abstraction in computation.
- LO 9: SC use models and simulations to raise and answer questions.

### Big Idea III: Data

- LO 10: SC use computers to process information to gain insight and knowledge.
- LO 11: SC communicate how computer programs are used to process information to gain insight and knowledge.
- LO 12: SC use computing to facilitate exploration and the discovery of connections in information.
- LO 13: SC use large datasets to explore and discover information and knowledge.
- LO 14: SC analyze the considerations involved in the computational manipulation of information.

### Big Idea IV: Algorithms

- LO 15: SC develop an algorithm.
- LO 16: SC express an algorithm in a language.
- LO 17: SC appropriately connect problems and potential algorithmic solutions.
- LO 18: SC evaluate algorithms analytically and empirically.

### Big Idea V: Programming

- LO 19: SC explain how programs implement algorithms.
- LO 20: SC use abstraction to manage complexity in programs.
- LO 21: SC evaluate a program for correctness.
- LO 22: SC develop a correct program.
- LO 23: SC employ appropriate mathematical and logical concepts in programming.

### Big Idea VI: Internet

- LO 24: SC explain the abstractions in the Internet and how the Internet functions.
- LO 25: SC explain characteristics of the Internet and the systems built on it.
- LO 26: SC analyze how characteristics of the Internet and systems built on it influence their use.
- LO 27: SC connect the concern of cybersecurity with the Internet and systems built on it.

### Big Idea VII: Impact

- LO 28: SC analyze how computing affects communication, interaction, and cognition.
- LO 29: SC connect computing with innovations in other fields.
- LO 30: SC analyze the beneficial and harmful effects of computing.
- LO 31: SC connect computing within economic, social, and cultural contexts.