

CONCEPT AND SKILL SYNTHESIS OF NGSS STANDARDS ELEMENTARY GRADES K - 5

Key:

- Grayed, small font: No standards are allocated, but the concept/skill is an intermediate level in a comprehensive structure of concepts/skills.
- Concepts and skills are organized cognitively according to generality, complexity, and abstractness.
- Percentages show how many of the NGSS standards were allocated to the basic concept.
- Color coding:

K	1st	2nd	3rd	4th	5th
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UNDERLYING TRANSFERABLE CONCEPTS		
BASIC CONCEPT	SUB-CONCEPT	SUB-SUB-CONCEPT
LANGUAGE OF SCIENCE 37% of all standards	ENTITY, SYSTEM, MATTER	HIERARCHY OF MATTER
	PROPERTY/MEASUREMENT	
	CHANGE/ PROCESS	
	SEQUENCE of EVENTS, TIME, RATE CYCLE CORRELATION, CAUSALITY	
INTERDEPENDENCE/ ECOSYSTEM 21%	COMPLEMENTARITY	FORM AND FUNCTION
ENERGY & ENERGY RESOURCES 8%	ENERGY FORMS & TRANSFORMATION	
WAVES 9%		
REPRODUCTION, HEREDITY 6%		
MOTION and FORCES 6%		
ELECTRICITY-and-MAGNETISM 3%		

UNDERLYING TRANSFERABLE SKILLS		
MAJOR SKILL	SUB-SKILL	SUB-SUB-SKILL
THE DESIGN PROCESSES 13%	IDENTIFY PROBLEM/GOAL <ul style="list-style-type: none"> • divide problem into smaller components 	CRITERIA, CONSTRAINTS