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Wee Engineer® and EiE® for Kindergarten Alignment to Science Georgia Standards of Excellence, 2016

EiE | WeeEngineer | EiE for Kindergarten

Wee Engineer – One Unit, Four Challenges

Engineering Challenge	Science Concept Connections	Science Georgia Standards of Excellence, Kindergarten
Noisemakers	• forces • sound • properties of materials	SKP1.a SKP1.b
Fans	• forces • properties of materials	SKP1.a SKP1.b SKP2.a
Wrecking Balls	• weight • force and motion • action and reaction	SKP1.a SKP1.b SKP2.a SKP2.b
Rafts	• sinking and floating	SKP1.a SKP1.b SKP1.c

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Wee Engineer® and EiE® for Kindergarten Alignment to Science Georgia Standards of Excellence, 2016

EiE | WeeEngineer | EiE for Kindergarten

EiE for Kindergarten – Two Units

Unit	Science Concept Connections	Science Georgia Standards of Excellence, Kindergarten
Raise the Roof: Designing Shelters	• light and shadow • the warming effect of the Sun • animals and animal needs	SKE1.a SKE1.b SKP1.a SKP1.b
Here's the Scoop: Designing Trash Collectors	• the basic needs of living things • animal habitats and ecosystems • human impact on the environment • recycling and environmental stewardship	SKP1.a SKP1.b SKP1.c

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EiE® Engineering is Elementary 2nd Edition
Alignment to Science Georgia Standards of Excellence, 2016

Engineering is Elementary

Units with Life Science Topics

Unit	Engineering and Science Fields	Science Georgia Standards of Excellence					
		Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
The Best of Bugs: Designing Hand Pollinators	Agricultural Engineering Insects and Plants	SKP1.a SKL2.a SKL2.b		S2P1.a S2L1.a S2L1.c			
Just Passing Through: Designing Model Membranes	Bioengineering Needs of Organisms		S1L1.b S1L1.c				
No Bones About It: Designing Knee Braces *	Biomedical Engineering Skeletal and Muscular Systems						
A Slick Solution: Cleaning an Oil Spill *Also listed with Earth Science*	Environmental Engineering Ecosystems	SKE2.a SKE2.c		S2E3 S2P1.a	S3E1.b S3L2.a S3L2.b	S4L1.a S4L1.b S4L1.c S4L1.d	
Thinking Inside the Box: Designing Plant Packages	Package Engineering Plants		S1L1.a S1L1.b S1L1.c				

** Designing Knee Braces aligns with the seventh grade Georgia standard S7L2.c.*

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EiE® Engineering is Elementary 2nd Edition
Alignment to Science Georgia Standards of Excellence, 2016

EiE Engineering is Elementary

Units with Earth Science Topics

Unit	Engineering and Science Fields	Science Georgia Standards of Excellence					
		Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Catching the Wind: Designing Windmills *Also listed with Physical Science*	Mechanical Engineering Weather	SKP2.a		S2P2.a S2P2.c		S4P3.a	
Now You're Cooking: Designing Solar Ovens *Also listed with Physical Science*	Green Engineering Energy and Energy Resources	SKP1.a		S2E3 S2P1.a	S3P1.a S3P1.b S3P1.c S3L2.b		
A Slick Solution: Cleaning an Oil Spill *Also listed with Life Science*	Environmental Engineering Ecosystems	SKE2.a SKE2.c		S2E3 S2P1.a	S3E1.b S3L2.a S3L2.b	S4L1.a S4L1.b S4L1.c S4L1.d	
Solid as a Rock: Replicating an Artifact	Materials Engineering Rocks and Minerals	SKE2.a SKE2.b SKP1.a		S2P1.a	S3E1.a		
A Stick in the Mud: Evaluating a Landscape	Geotechnical Engineering Landforms and Maps	SKE2.a SKE2.c		S2E3	S3E1.b		S5E1.a S5E1.c
A Sticky Situation: Designing Walls *Also listed with Physical Science*	Materials Engineering Earth Materials	SKE2.a SKE2.c SKP1.a		S2P1.a	S3E1.b		S5P1.a
Water, Water Everywhere: Designing Water Filters	Environmental Engineering Water	SKE2.a SKP1.a		S2E3 S2P1.a	S3L2.a S3L2.b	S4E3	

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EiE® Engineering is Elementary 2nd Edition
Alignment to Science Georgia Standards of Excellence, 2016

Engineering is Elementary

Units with Physical Science Topics

Unit	Engineering and Science Fields	Science Georgia Standards of Excellence					
		Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
An Alarming Idea: Designing Alarm Circuits	Electrical Engineering Electricity		S1P1.e			S4P2.b	S5P2.b S5P2.c
The Attraction Is Obvious: Designing Maglev Systems	Transportation Engineering Magnets		S1P2.a S1P2.b			S4P3.a	S5P3.b
Catching the Wind: Designing Windmills *Also listed with Earth Science*	Mechanical Engineering Weather	SKP2.a		S2P2.a S2P2.c		S4P3.a	
To Get to the Other Side: Designing Bridges	Civil Engineering Forces	SKP1.a SKP2.a		S2P1.a		S4P3.a	
Lighten Up: Designing Lighting Systems	Optical Engineering Light		S1P1.a S1P1.b S1P1.c	S2P1.a		S4P1.a S4P1.b	
A Long Way Down: Designing Parachutes	Aerospace Engineering Solar System	SKE2.a SKP1.a SKP2.a		S2P1.a S2P2.b S2P2.c		S4E1.d S4P3.a S4P3.b	
Marvelous Machines: Making Work Easier	Industrial Engineering Simple Machines	SKP2.a SKP2.b		S2P2.a S2P2.b S2P2.c		S4P3.a S4P3.c	
Now You're Cooking: Designing Solar Ovens *Also listed with Earth Science*	Green Engineering Energy	SKP1.a		S2E3 S2P1.a	S3P1.a S3P1.b S3P1.c S3L2.b		

Physical Science continues on next page.

Units with Physical Science Topics, *continued*

Unit	Engineering and Science Fields	Science Georgia Standards of Excellence					
		Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Sounds Like Fun: Seeing Animal Sounds	Acoustical Engineering Sound	SKP1.a	S1P1.d			S4P2.a	
A Sticky Situation: Designing Walls *Also listed with Earth Science*	Materials Engineering Earth Materials	SKE2.a SKE2.c SKP1.a		S2P1.a	S3E1.b		S5P1.a
Taking the Plunge: Designing Submersibles *Also listed with Earth Science*	Ocean Engineering Sinking and Floating	SKE2.a SKP1.c		S2P1.a			
A Work in Process: Improving a Play Dough Process	Chemical Engineering Process Engineering Solids and Liquids						S5P1.c

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EiE® Engineering Essentials™
Alignment to Science Georgia Standards of Excellence, 2016

EiE Engineering Essentials™

Unit Title	Engineering Field	Suggested Grade(s)	Science Georgia Standards of Excellence				
			Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Designing Lighting Systems	Optical Engineering	1, 4	S1P1.a S1P1.b S1P1.c			S4P1.a S4P1.b	
Designing Hand Pollinators	Agricultural Engineering	2		S2P1.a S2L1.a S2L1.c			
Designing Solar Ovens	Green Engineering	3			S3P1.a S3P1.b S3P1.c S3L2.b		
Cleaning an Oil Spill	Environmental Engineering	4				S4L1.a S4L1.b S4L1.c S4L1.d	
Designing Maglev Systems	Transportation Engineering	5	S1P2.a S1P2.b				S5P3.b

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EiE® Computer Science Essentials™ Alignment to Georgia Standards of Excellence – Computer Science

EiE Computer Science Essentials™

Unit	Concept / Tool Type	Suggested Grades	Georgia Standards of Excellence – Computer Science	
			Grades K–2	Grades 3–5
Programming Robots	Computing Systems Robotics	K–2	CSS.IDC.K-2.4.5 CSS.CT.K-2.5 CSS.GC.K-2.7.4 CSS.DA.K-2.9.3 CSS.DA.K-2.9.10	CSS.GC.3-5.7.3
Creating Animations	Algorithms & Programming Visual Programming	K–2	CSS.KC.K-2.2.1 CSS.IDC.K-2.4.5 CSS.CT.K-2.5 CSS.GC.K-2.7.4 CSS.DA.K-2.9.3 CSS.DA.K-2.9.8 CSS.DA.K-2.9.10	CSS.EL.3-5.1.1 CSS.EL.3-5.1.2 CSS.EL.3-5.1.3 CSS.EL.3-5.1.4 CSS.IDC.3-5.4.1 CSS.IDC.3-5.4.2 CSS.CT.3-5.5.1 CSS.CT.3-5.5.2 CSS.CT.3-5.5.3 CSS.CC.3-5.6.1 CSS.CC.3-5.6.2 CSS.GC.3-5.7.3
Building Automated Systems	Computing Systems Visual Computing	2–5	CSS.KC.K-2.2.1 CSS.KC.K-2.2.2 CSS.IDC.K-2.4.5 CSS.CT.K-2.5 CSS.GC.K-2.7.4 CSS.DA.K-2.9.3 CSS.DA.K-2.9.8 CSS.DA.K-2.9.10	CSS.EL.3-5.1.1 CSS.EL.3-5.1.2 CSS.EL.3-5.1.3 CSS.EL.3-5.1.4 CSS.IDC.3-5.4.1 CSS.IDC.3-5.4.2 CSS.CT.3-5.5.1 CSS.CT.3-5.5.2 CSS.CT.3-5.5.3 CSS.CC.3-5.6.1 CSS.CC.3-5.6.2 CSS.GC.3-5.7.3 CSS.GC.3-5.7.5
Designing Computer Games	Impacts of Computing Visual Programming	3–5	CSS.KC.K-2.2.1 CSS.KC.K-2.2.2 CSS.IDC.K-2.4.2 CSS.IDC.K-2.4.5 CSS.CT.K-2.5 CSS.CC.K-2.6.4 CSS.GC.K-2.7.4 CSS.DA.K-2.9.3 CSS.DA.K-2.9.10	CSS.EL.3-5.1.1 CSS.EL.3-5.1.2 CSS.EL.3-5.1.3 CSS.EL.3-5.1.4 CSS.IDC.3-5.4 CSS.CT.3-5.5.1 CSS.CT.3-5.5.2 CSS.CT.3-5.5.3 CSS.CT.3-5.5.4 CSS.CC.3-5.6.1 CSS.CC.3-5.6.2 CSS.GC.3-5.7.3 CSS.GC.3-5.7.5
Analyzing Digital Images	Data & Analysis Visual Programming	3–5	CSS.KC.K-2.2.1 CSS.KC.K-2.2.2 CSS.IDC.K-2.4.2 CSS.IDC.K-2.4.5 CSS.CT.K-2.5 CSS.CC.K-2.6.4 CSS.GC.K-2.7.4 CSS.DA.K-2.9.3 CSS.DA.K-2.9.10	CSS.EL.3-5.1.1 CSS.EL.3-5.1.2 CSS.EL.3-5.1.3 CSS.EL.3-5.1.4 CSS.IDC.3-5.4 CSS.CT.3-5.5.1 CSS.CT.3-5.5.2 CSS.CT.3-5.5.3 CSS.CT.3-5.5.4 CSS.CC.3-5.6.1 CSS.CC.3-5.6.2 CSS.GC.3-5.7.3 CSS.GC.3-5.7.5

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EiE® Engineering Adventures Alignment to Science Georgia Standards of Excellence, 2016

EiE Engineering Adventures

Unit	Engineering Fields and Science Connections	Science Georgia Standards of Excellence		
		Grade 3	Grade 4	Grade 5
Bubble Bonanza: Engineering Bubble Wands	Materials Engineering Matter and Its Interactions			
Go Green: Engineering Recycled Racers	Green Engineering Energy, Forces		S4P3.a S4P3.b S4P3.c	
In Good Hands: Engineering Space Gloves	Materials Engineering Properties of Materials, Energy Transfer	S3P1.a S3P1.c		
Liftoff: Engineering Rockets and Rovers	Aerospace Engineering Forces and Interactions		S4E1.a S4P3.a S4P3.b	
Light Up the Night: An Electrical Engineering Challenge	Electrical Engineering Electric Circuits, Light		S4P1.a S4P1.b S4P1.c S4P2.b	S5P2.b S5P2.c
Music to My Ears: An Acoustical Engineering Challenge	Acoustical Engineering Sound		S4P2.a S4P2.b	

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EiE® Engineering Adventures Alignment to Science Georgia Standards of Excellence, 2016

EiE Engineering Adventures

Unit	Engineering Fields and Science Connections	Science Georgia Standards of Excellence		
		Grade 3	Grade 4	Grade 5
The Sky's the Limit: Engineering Flying Technologies	Aeronautical Engineering Forces and Interactions		S4P3.a S4P3.b	
Shake Things Up: Engineering Earthquake-Resistant Buildings	Earthquake Engineering Earthquakes		S4P3.a S4P3.b	S5E1.c
A Slippery Slope: Engineering an Avalanche Protection System	Avalanche Engineering Forces and Interactions		S4P3.b	S5E1.c
Hop to It: Safe Removal of Invasive Species	Mechanical Engineering Environmental Science	S3L1.b S3L1.c	S4L1.c S4L1.d	
To the Rescue: Engineering Aid Drop Packages	Package Engineering Energy, Forces		S4P3.a S4P3.b	

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EiE® Engineering Everywhere Alignment to Science Georgia Standards of Excellence, 2016

EiE Engineering Everywhere.

Unit	Engineering Field	Science Topics	Science Georgia Standards of Excellence		
			Grade 6	Grade 7	Grade 8
Don't Runoff: Engineering an Urban Landscape	Environmental Engineering	Natural Resources Earth and Human Activity	S6E3.a S6E3.b S6E6.b		
Food for Thought: Engineering Ice Cream	Process Engineering	Matter Energy Transfer			S8P1.a S8P1.d
Go Fish: Engineering Prosthetic Tails	Biomechanical Engineering	Structures and Function in Animals		S7L2.c	
Growing Up: Engineering Vertical Farms	Agricultural Engineering	Light Photosynthesis Natural Resources	S6E2.c S6E3.b S6E6.a S6E6.b	S7L4.b	
It's in the Bag: Engineering Bioinspired Gear	Materials Engineering Bioinspired Engineering	Structures and Function in Animals		S7L1.a S7L5.b	
Outbreak Alert!: Engineering a Pandemic Response	Biomedical Engineering	Cells, Viruses Public Health		S7L1.a S7L1.b S7L3.a S7L3.b S7L5.a S7L5.b	
Testing the Waters: Engineering a Water Reuse Process	Process Engineering Water Resource Engineering	Natural Resources	S6E6.a S6E6.b	S7L4.c	

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EiE® Engineering Everywhere Alignment to Science Georgia Standards of Excellence, 2016

EiE Engineering Everywhere.

Unit	Engineering Field	Science Topics	Science Georgia Standards of Excellence		
			Grade 6	Grade 7	Grade 8
Worlds Apart: Engineering Remote Sensing Devices	Remote Sensing Engineering	Light Solar System			S8P4.a S8P4.b S8P4.c S8P4.d S8P4.g
Plants to Plastics: Engineering Bioplastics	Chemical Engineering	Properties of Matter Chemical Reactions			S8P1.a S8P1.c
It's About Time: Engineering Timers	Mechanical Engineering	Physical Science			S8P3.a
Put a Lid on It: Engineering Safety Helmets	Biomechanical Engineering	Forces and Motion Nervous System		S7L2.c	S8P2.a S8P2.b S8P3.a S8P3.b
Here Comes the Sun: Engineering Insulated Homes	Green Engineering	Thermal Energy Transfer Properties of Matter Natural Resources Earth and Human Activity	S6E2.c S6E4.b		