

Unit	Science Concept Connections	Pennsylvania STEELS K-12 Standards
		Kindergarten
Raise the Roof: Designing Shelters	<ul style="list-style-type: none"> • light and shadow • the warming effect of the Sun • animals and animal needs 	<p>Science, Conservation of Energy and Energy Transfer: 3.2.K.C, 3.2.K.D</p> <p>Science, Biogeology: 3.3.K.B</p> <p>Technology & Engineering: 3.5.K-2.B, 3.5.K-2.C, 3.5.K-2.E, 3.5.K-2.F, 3.5.K-2.G, 3.5.K-2.J, 3.5.K-2.K, 3.5.K-2.M, 3.5.K-2.N, 3.5.K-2.O, 3.5.K-2.P, 3.5.K-2.Q, 3.5.K-2.S, 3.5.K-2.T, 3.5.K-2.U, 3.5.K-2.V, 3.5.K-2.X, 3.5.K-2.Z, 3.5.K-2.AA, 3.5.K-2.DD</p>
Here's the Scoop: Designing Trash Collectors	<ul style="list-style-type: none"> • the basic needs of living things • animal habitats and ecosystems • human impact on the environment • recycling and environmental stewardship 	<p>Science, Human Impact on Earth Systems: 3.3.K.E</p> <p>Environmental Literacy & Sustainability: 3.4.K-2.D</p> <p>Technology & Engineering: 3.5.K-2.B, 3.5.K-2.C, 3.5.K-2.E, 3.5.K-2.F, 3.5.K-2.G, 3.5.K-2.J, 3.5.K-2.K, 3.5.K-2.M, 3.5.K-2.N, 3.5.K-2.O, 3.5.K-2.P, 3.5.K-2.Q, 3.5.K-2.S, 3.5.K-2.T, 3.5.K-2.U, 3.5.K-2.V, 3.5.K-2.X, 3.5.K-2.Z, 3.5.K-2.AA, 3.5.K-2.BB, 3.5.K-2.DD</p>

Unit	Science Concept Connections	Pennsylvania STEELS K-12 Standards and CSTA Computer Science Standards
		Kindergarten
<p>Sort It Out: Recycling with Robots <i>A Computer Science Investigation</i></p>	<ul style="list-style-type: none"> • human impact on the environment • recycling and environmental stewardship 	<p>CSTA: 1A-DA-06, 1A-AP-08, 1A-AP-09, 1A-AP-10, 1A-AP-11, 1A-AP-12, 1A-AP-14, 1A-AP-15</p> <p>STEELS: Science, Human Impact on Earth Systems: 3.3.K.E</p> <p>STEELS: Environmental Literacy & Sustainability: 3.4.K-2.D</p> <p>STEELS: Technology & Engineering: 3.5.K-2.A, 3.5.K-2.C, 3.5.K-2.D, 3.5.K-2.E, 3.5.K-2.F, 3.5.K-2.G, 3.5.K-2.H, 3.5.K-2.J, 3.5.K-2.K, 3.5.K-2.M, 3.5.K-2.O, 3.5.K-2.P, 3.5.K-2.R, 3.5.K-2.S, 3.5.K-2.T, 3.5.K-2.V, 3.5.K-2.W, 3.5.K-2.X, 3.5.K-2.AA, 3.5.K-2.CC, 3.5.K-2.DD</p>

**K – 2 STEELS Alignments
Units with Life Science Topics**

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Kindergarten	Grade 1	Grade 2		Grades K – 2	
The Best of Bugs: Designing Hand Pollinators	Agricultural Engineering Insects and Plants		3.1.1.A	3.1.2.B 3.2.2.A 3.2.2.B	3.4.K-2.A 3.4.K-2.B	3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
Just Passing Through: Designing Model Membranes	Bioengineering Needs of Organisms	3.1.K.A	3.1.1.A			3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q 3.5.K-2.R	3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
A Slick Solution: Cleaning an Oil Spill <i>Also listed with Earth Science</i>	Environmental Engineering Ecosystems				3.4.K-2.B 3.4.K-2.C	3.5.K-2.C 3.5.K-2.E 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD

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K – 2 Alignments, Units with Life Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Kindergarten	Grade 1	Grade 2		Grades K – 2	
Thinking Inside the Box: Designing Plant Packages	Package Engineering Plants	3.1.K.A		3.1.2.A 3.2.2.A 3.2.2.B		3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.H 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD

K – 2 Alignments, Units with Earth Science Topics

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Kindergarten	Grade 1	Grade 2		Grades K – 2	
Catching the Wind: Designing Windmills	Mechanical Engineering Weather	3.3.K.A				3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q 3.5.K-2.R	3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
A Slick Solution: Cleaning an Oil Spill <i>Also listed with Life Science</i>	Environmental Engineering Ecosystems	3.3.K.A 3.3.K.C 3.3.K.E			3.4.K-2.B 3.4.K-2.C	3.5.K-2.C 3.5.K-2.E 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
A Stick in the Mud: Evaluating a Landscape	Geotechnical Engineering Landforms and Maps			3.3.2.A	3.4.K-2.C	3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.H 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD

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K – 2 Alignments, Units with Earth Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Kindergarten	Grade 1	Grade 2		Grades K – 2	
<p align="center">Solid as a Rock: Replicating an Artifact</p> <p><i>Available as a digital unit. Materials Kit not available for purchase.</i></p>	<p align="center">Materials Engineering</p> <p align="center">Rocks and Minerals</p>					3.5.K-2.C	3.5.K-2.S
						3.5.K-2.F	3.5.K-2.T
						3.5.K-2.G	3.5.K-2.U
						3.5.K-2.J	3.5.K-2.V
					3.2.2.A	3.5.K-2.K	3.5.K-2.X
					3.2.2.B	3.5.K-2.M	3.5.K-2.Z
						3.5.K-2.O	3.5.K-2.AA
						3.5.K-2.P	3.5.K-2.BB
						3.5.K-2.Q	3.5.K-2.DD
						3.5.K-2.R	

K – 2 Alignments, Units with Physical Science Topics

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Kindergarten	Grade 1	Grade 2		Grades K – 2	
To Get to the Other Side: Designing Bridges	Civil Engineering Forces	3.2.K.A 3.2.K.B				3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.H 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
Lighten Up: Designing Lighting Systems	Optical Engineering Light		3.2.1.B 3.2.1.C			3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.H 3.5.K-2.J 3.5.K-2.K 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
Sounds Like Fun: Seeing Animal Sounds	Acoustical Engineering Sound		3.2.1.A 3.2.1.D			3.5.K-2.A 3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD

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K – 2 Alignments, Units with Physical Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Kindergarten	Grade 1	Grade 2		Grades K – 2	
Sounds Like Fun: Seeing Animal Sounds	Acoustical Engineering Sound		3.2.1.A 3.2.1.D			3.5.K-2.A 3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
A Sticky Situation: Designing Walls	Materials Engineering Earth Materials			3.2.2.A 3.2.2.B 3.2.2.C	3.4.K-2.A	3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD
Taking the Plunge: Designing Submersibles	Ocean Engineering Sinking and Floating			3.2.2.A 3.2.2.B		3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.H 3.5.K-2.J 3.5.K-2.K 3.5.K-2.L 3.5.K-2.M 3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q	3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.DD

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K – 2 Alignments, Units with Physical Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Kindergarten	Grade 1	Grade 2		Grades K – 2	
A Work in Process: Improving a Play Dough Process	Chemical Engineering Process Engineering Solids and Liquids					3.5.K-2.C	3.5.K-2.R
						3.5.K-2.F	3.5.K-2.S
						3.5.K-2.G	3.5.K-2.T
						3.5.K-2.H	3.5.K-2.U
					3.2.2.A	3.5.K-2.J	3.5.K-2.V
					3.2.2.B	3.5.K-2.K	3.5.K-2.X
						3.5.K-2.L	3.5.K-2.Z
						3.5.K-2.M	3.5.K-2.AA
						3.5.K-2.O	3.5.K-2.BB
						3.5.K-2.P	3.5.K-2.DD
						3.5.K-2.Q	

**3 – 5 STEELS Alignments
Units with Life Science Topics**

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
The Best of Bugs: Designing Hand Pollinators	Agricultural Engineering Insects and Plants	3.1.3.G		3.2.5.C	3.4.3-5.A 3.4.3-5.B 3.4.3-5.F	3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Just Passing Through: Designing Model Membranes	Bioengineering Needs of Organisms	3.1.3.G		3.2.5.C	3.4.3-5.A	3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
No Bones About It: Designing Knee Braces	Biomedical Engineering Skeletal and Muscular Systems		3.1.4.A			3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S	3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.Z 3.5.3-5.BB 3.5.3-5.FF

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3 – 5 Alignments, Units with Life Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
A Slick Solution: Cleaning an Oil Spill <i>Also listed with Earth Science</i>	Environmental Engineering Ecosystems	3.1.3.G 3.1.3.H		3.1.5.A 3.1.5.B 3.3.5.F	3.4.3-5.A 3.4.3-5.B 3.4.3-5.D 3.4.3-5.E 3.4.3-5.F	3.5.3-5.E 3.5.3-5.G 3.5.3-5.I 3.5.3-5.K 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P	3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Thinking Inside the Box: Designing Plant Packages	Package Engineering Plants		3.1.4.A		3.4.3-5.A	3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

3 – 5 Alignments, Units with Earth Science Topics

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
<p>Catching the Wind: Designing Windmills</p> <p><i>Also listed with Physical Science</i></p>	<p>Mechanical Engineering</p> <p>Weather</p>	<p>3.2.3.A 3.2.3.B 3.3.3.B</p>				<p>3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R</p>	<p>3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF</p>
<p>Now You're Cooking: Designing Solar Ovens</p> <p><i>Also listed with Physical Science</i></p>	<p>Green Engineering</p> <p>Energy and Energy Resources</p>		<p>3.2.4.B 3.2.4.D 3.3.4.D</p>	<p>3.2.5.C 3.3.5.E</p>	<p>3.4.3-5.B 3.4.3-5.C 3.4.3-5.F</p>	<p>3.5.3-5.B 3.5.3-5.E 3.5.3-5.F 3.5.3-5.G 3.5.3-5.H 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P</p>	<p>3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.EE 3.5.3-5.FF</p>
<p>A Slick Solution: Cleaning an Oil Spill</p> <p><i>Also listed with Life Science</i></p>	<p>Environmental Engineering</p> <p>Ecosystems</p>			<p>3.3.5.C 3.3.5.D 3.3.5.E 3.3.5.F</p>	<p>3.4.3-5.A 3.4.3-5.B 3.4.3-5.D 3.4.3-5.E 3.4.3-5.F</p>	<p>3.5.3-5.E 3.5.3-5.G 3.5.3-5.I 3.5.3-5.K 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P</p>	<p>3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF</p>

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3 – 5 Alignments, Units with Earth Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
<p align="center">Solid as a Rock: Replicating an Artifact</p> <p align="center"><i>Available as a digital unit. Materials Kit not available for purchase.</i></p>	<p align="center">Materials Engineering</p> <p align="center">Rocks and Minerals</p>		3.3.4.A	3.2.5.C		<p>3.5.3-5.B</p> <p>3.5.3-5.I</p> <p>3.5.3-5.L</p> <p>3.5.3-5.M</p> <p>3.5.3-5.N</p> <p>3.5.3-5.O</p> <p>3.5.3-5.P</p> <p>3.5.3-5.Q</p>	<p>3.5.3-5.R</p> <p>3.5.3-5.S</p> <p>3.5.3-5.T</p> <p>3.5.3-5.U</p> <p>3.5.3-5.W</p> <p>3.5.3-5.X</p> <p>3.5.3-5.BB</p> <p>3.5.3-5.FF</p>
<p align="center">A Stick in the Mud: Evaluating a Landscape</p>	<p align="center">Geotechnical Engineering</p> <p align="center">Landforms and Maps</p>	3.3.3.C	<p align="center">3.3.4.B</p> <p align="center">3.3.4.C</p> <p align="center">3.3.4.E</p>			<p>3.5.3-5.B</p> <p>3.5.3-5.H</p> <p>3.5.3-5.I</p> <p>3.5.3-5.J</p> <p>3.5.3-5.L</p> <p>3.5.3-5.M</p> <p>3.5.3-5.N</p> <p>3.5.3-5.O</p> <p>3.5.3-5.P</p> <p>3.5.3-5.Q</p>	<p>3.5.3-5.R</p> <p>3.5.3-5.S</p> <p>3.5.3-5.T</p> <p>3.5.3-5.U</p> <p>3.5.3-5.V</p> <p>3.5.3-5.W</p> <p>3.5.3-5.X</p> <p>3.5.3-5.BB</p> <p>3.5.3-5.EE</p> <p>3.5.3-5.FF</p>
<p align="center">Taking the Plunge: Designing Submersibles</p> <p align="center"><i>Also listed with Physical Science</i></p>	<p align="center">Ocean Engineering</p> <p align="center">Sinking and Floating</p>		3.3.4.C	<p align="center">3.2.5.B</p> <p align="center">3.3.5.C</p> <p align="center">3.3.5.D</p>		<p>3.5.3-5.I</p> <p>3.5.3-5.L</p> <p>3.5.3-5.M</p> <p>3.5.3-5.N</p> <p>3.5.3-5.O</p> <p>3.5.3-5.P</p> <p>3.5.3-5.Q</p> <p>3.5.3-5.R</p>	<p>3.5.3-5.S</p> <p>3.5.3-5.T</p> <p>3.5.3-5.U</p> <p>3.5.3-5.W</p> <p>3.5.3-5.X</p> <p>3.5.3-5.BB</p> <p>3.5.3-5.FF</p>
<p align="center">Water, Water Everywhere: Designing Water Filters</p>	<p align="center">Environmental Engineering</p> <p align="center">Water</p>			<p align="center">3.2.5.C</p> <p align="center">3.3.5.C</p> <p align="center">3.3.5.E</p> <p align="center">3.3.5.F</p>	<p align="center">3.4.3-5.A</p> <p align="center">3.4.3-5.F</p>	<p>3.5.3-5.E</p> <p>3.5.3-5.I</p> <p>3.5.3-5.L</p> <p>3.5.3-5.M</p> <p>3.5.3-5.N</p> <p>3.5.3-5.O</p> <p>3.5.3-5.P</p> <p>3.5.3-5.Q</p> <p>3.5.3-5.R</p>	<p>3.5.3-5.S</p> <p>3.5.3-5.T</p> <p>3.5.3-5.U</p> <p>3.5.3-5.V</p> <p>3.5.3-5.W</p> <p>3.5.3-5.X</p> <p>3.5.3-5.BB</p> <p>3.5.3-5.FF</p>

3 – 5 Alignments, Units with Physical Science Topics

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
An Alarming Idea: Designing Alarm Circuits	Electrical Engineering Electricity		3.2.4.B 3.2.4.D	3.2.5.B		3.5.3-5.A 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.DD 3.5.3-5.FF
The Attraction Is Obvious: Designing Maglev Systems	Transportation Engineering Magnets	3.2.3.C 3.2.3.D		3.2.5.B		3.5.3-5.B 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.DD 3.5.3-5.FF
Catching the Wind: Designing Windmills <i>Also listed with Earth Science</i>	Mechanical Engineering Weather	3.2.3.A 3.2.3.B 3.3.3.A	3.2.4.A 3.2.4.D 3.3.4.D			3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

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3 – 5 Alignments, Units with Physical Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
To Get to the Other Side: Designing Bridges	Civil Engineering Forces	3.2.3.B		3.2.5.F	3.4.3-5.G	3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Lighten Up: Designing Lighting Systems	Optical Engineering Light		3.2.4.F			3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.DD 3.5.3-5.FF
A Long Way Down: Designing Parachutes	Aerospace Engineering Solar System	3.2.3.A 3.2.3.B		3.2.5.C 3.2.5.F		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Marvelous Machines: Making Work Easier	Industrial Engineering Simple Machines	3.2.3.B		3.2.5.F		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S	3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.CC 3.5.3-5.DD 3.5.3-5.FF

Physical Science continues on next page.

3 – 5 Alignments, Units with Physical Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
Marvelous Machines: Making Work Easier	Industrial Engineering Simple Machines	3.2.3.B		3.2.5.F		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S	3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.CC 3.5.3-5.DD 3.5.3-5.FF
Now You're Cooking: Designing Solar Ovens <i>Also listed with Earth Science</i>	Green Engineering Energy		3.2.4.B 3.2.4.D 3.3.4.D	3.2.5.C	3.4.3-5.B 3.4.3-5.C 3.4.3-5.F	3.5.3-5.B 3.5.3-5.E 3.5.3-5.F 3.5.3-5.G 3.5.3-5.H 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P	3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.EE 3.5.3-5.FF
Sounds Like Fun: Seeing Animal Sounds	Acoustical Engineering Sound		3.2.4.B 3.2.4.E 3.2.4.G			3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

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3 – 5 Alignments, Units with Physical Science Topics, *continued*

Unit	Engineering and Science Fields	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
A Sticky Situation: Designing Walls	Materials Engineering Earth Materials			3.2.5.C 3.2.5.E		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q	3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Taking the Plunge: Designing Submersibles <i>Also listed with Earth Science</i>	Ocean Engineering Sinking and Floating			3.2.5.B 3.3.5.C 3.3.5.D		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q	3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
A Work in Process: Improving a Play Dough Process	Chemical Engineering Process Engineering Solids and Liquids			3.2.5.B 3.2.5.C 3.2.5.E		3.5.3-5.C 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q	3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

Suggested Grade	Unit	STEELS				
		Science	Environmental Literacy & Sustainability	Technology & Engineering		
1st	Designing Lighting Systems	3.2.1.B 3.2.1.C		3.5.K-2.B 3.5.K-2.C 3.5.K-2.F 3.5.K-2.G 3.5.K-2.H 3.5.K-2.J 3.5.K-2.K 3.5.K-2.M	3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q 3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V	3.5.K-2.W 3.5.K-2.X 3.5.K-2.Y 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.CC 3.5.K-2.DD
2nd	Designing Hand Pollinators	3.1.2.B 3.2.2.A 3.2.2.B	3.4.K-2.A 3.4.K-2.B	3.5.K-2.B 3.5.K-2.C 3.5.K-2.G 3.5.K-2.H 3.5.K-2.I 3.5.K-2.J 3.5.K-2.K 3.5.K-2.M	3.5.K-2.O 3.5.K-2.P 3.5.K-2.Q 3.5.K-2.R 3.5.K-2.S 3.5.K-2.T 3.5.K-2.U 3.5.K-2.V	3.5.K-2.W 3.5.K-2.X 3.5.K-2.Z 3.5.K-2.AA 3.5.K-2.BB 3.5.K-2.CC 3.5.K-2.DD
3rd	Designing Maglev Systems	3.2.3.C 3.2.3.D		3.5.3-5.B 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O	3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U	3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.DD 3.5.3-5.FF
4th	Designing Solar Ovens	3.2.4.B 3.2.4.D 3.3.4.D	3.4.3-5.B 3.4.3-5.C 3.4.3-5.F	3.5.3-5.B 3.5.3-5.E 3.5.3-5.F 3.5.3-5.G 3.5.3-5.I 3.5.3-5.J 3.5.3-5.L 3.5.3-5.M	3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S 3.5.3-5.T	3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.EE 3.5.3-5.FF

Suggested Grade	Unit	STEELS				
		Science	Environmental Literacy & Sustainability	Technology & Engineering		
5th	Cleaning an Oil Spill	3.1.5.A 3.1.5.B 3.3.5.C 3.3.5.D 3.3.5.E	3.4.3-5.A 3.4.3-5.B 3.4.3-5.D 3.4.3-5.E 3.4.3-5.F	3.5.3-5.E 3.5.3-5.I 3.5.3-5.K 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N	3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R 3.5.3-5.S 3.5.3-5.T	3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

Unit	Engineering Fields and Science Connections	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
Bubble Bonanza: Engineering Bubble Wands	Materials Engineering Matter and Its Interactions			3.2.5.B 3.2.5.E		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Go Green: Engineering Recycled Racers	Green Engineering Energy, Forces	3.2.3.B	3.2.4.A			3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
In Good Hands: Engineering Space Gloves	Materials Engineering Properties of Materials, Energy Transfer	3.3.3.C	3.2.4.B 3.2.4.C	3.2.5.B 3.2.5.C		3.5.3-5.B 3.5.3-5.I 3.5.3-5.K 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q	3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Liftoff: Engineering Rockets and Rovers	Aerospace Engineering Forces and Interactions	3.2.3.B		3.2.5.F		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

Unit	Engineering Fields and Science Connections	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
Light Up the Night: An Electrical Engineering Challenge	Electrical Engineering Electric Circuits, Light		3.2.4.B 3.2.4.D	3.2.5.B		3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Music to My Ears: An Acoustical Engineering Challenge	Acoustical Engineering Sound		3.2.4.B 3.2.4.E			3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
The Sky's the Limit: Engineering Flying Technologies	Aeronautical Engineering Forces and Interactions	3.2.3.A 3.2.3.B 3.3.3.B		3.2.5.F		3.5.3-5.C 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q	3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Shake Things Up: Engineering Earthquake-Resistant Buildings	Earthquake Engineering Earthquakes	3.2.3.B	3.3.4.E		3.4.3-5.A	3.5.3-5.C 3.5.3-5.D 3.5.3-5.H 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q	3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

Unit	Engineering Fields and Science Connections	Science			Environmental Literacy & Sustainability	Technology & Engineering	
		Grade 3	Grade 4	Grade 5		Grades 3 – 5	
A Slippery Slope: Engineering an Avalanche Protection System	Avalanche Engineering Forces and Interactions	3.2.3.A 3.2.3.B	3.2.4.B 3.2.4.E 3.3.4.E		3.4.3-5.A	3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
Hop to It: Safe Removal of Invasive Species	Mechanical Engineering Environmental Science	3.1.3.F 3.1.3.G 3.1.3.H 3.2.3.B			3.4.3-5.A 3.4.3-5.B 3.4.3-5.F	3.5.3-5.G 3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q	3.5.3-5.R 3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF
To the Rescue: Engineering Aid Drop Packages	Package Engineering Energy, Forces		3.2.4.C			3.5.3-5.I 3.5.3-5.L 3.5.3-5.M 3.5.3-5.N 3.5.3-5.O 3.5.3-5.P 3.5.3-5.Q 3.5.3-5.R	3.5.3-5.S 3.5.3-5.T 3.5.3-5.U 3.5.3-5.V 3.5.3-5.W 3.5.3-5.X 3.5.3-5.BB 3.5.3-5.FF

**EiE® Engineering Everywhere Alignment to
Pennsylvania Science, Technology & Engineering, and
Environmental Literacy & Sustainability Standards (STEELS), 2022**

Unit	Engineering Fields and Science Connections	Science Grades 6 – 8	Environmental Literacy & Sustainability Grades 6 – 8	Technology & Engineering Grades 6 – 8	
Don't Runoff: Engineering an Urban Landscape	Environmental Engineering Natural Resources Earth and Human Activity	3.1.6-8.I 3.1.6-8.L 3.1.6-8.U 3.3.6-8.M 3.3.6-8.N	3.4.6-8.C 3.4.6-8.G 3.4.6-8.H	3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O 3.5.6-8.P	3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X
Food for Thought: Engineering Ice Cream	Process Engineering Matter Energy Transfer	3.2.6-8.D 3.2.6-8.F 3.2.6-8.R		3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O 3.5.6-8.P	3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X 3.5.6-8.EE
Go Fish: Engineering Prosthetic Tails	Biomechanical Engineering Structures and Function in Animals	3.1.6-8.D		3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O 3.5.6-8.P	3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X
Growing Up: Engineering Vertical Farms	Agricultural Engineering Light Photosynthesis Natural Resources	3.1.6-8.D 3.1.6-8.F 3.1.6-8.U 3.2.6-8.R	3.4.6-8.A 3.4.6-8.H	3.5.6-8.D 3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O	3.5.6-8.P 3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X
It's in the Bag: Engineering Bioinspired Gear	Materials Engineering Bioinspired Engineering Structures and Function in Animals	3.1.6-8.D		3.5.6-8.C 3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O 3.5.6-8.P	3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.T 3.5.6-8.X
Outbreak Alert!: Engineering a Pandemic Response	Biomedical Engineering Cells, Viruses Public Health	3.1.6-8.A 3.1.6-8.M 3.1.6-8.S		3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O 3.5.6-8.P	3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X 3.5.6-8.Z
Testing the Waters: Engineering a Water Reuse Process	Process Engineering Water Resource Engineering Natural Resources	3.1.6-8.U 3.3.6-8.M 3.3.6-8.N	3.4.6-8.G 3.4.6-8.H	3.5.6-8.D 3.5.6-8.E 3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O	3.5.6-8.P 3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X

Unit	Engineering Fields and Science Connections	Science Grades 6 – 8	Environmental Literacy & Sustainability Grades 6 – 8	Technology & Engineering Grades 6 – 8	
Worlds Apart: Engineering Remote Sensing Devices	Remote Sensing Engineering Light Solar System	3.2.6-8.R 3.3.6-8.C 3.3.6-8.G		3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O 3.5.6-8.P	3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X 3.5.6-8.JJ
Plants to Plastics: Engineering Bioplastics	Chemical Engineering Properties of Matter Chemical Reactions	3.2.6-8.C 3.2.6-8.D 3.3.6-8.M	3.4.6-8.G 3.4.6-8.H	3.5.6-8.C 3.5.6-8.D 3.5.6-8.E 3.5.6-8.G 3.5.6-8.H 3.5.6-8.I 3.5.6-8.M 3.5.6-8.N	3.5.6-8.O 3.5.6-8.P 3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X 3.5.6-8.JJ
It's About Time: Engineering Timers	Mechanical Engineering Physical Science			3.5.6-8.F 3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O	3.5.6-8.P 3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.X
Put a Lid on It: Engineering Safety Helmets	Biomechanical Engineering Forces and Motion Nervous System	3.1.6-8.H 3.2.6-8.G		3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O 3.5.6-8.P	3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.T 3.5.6-8.X
Here Comes the Sun: Engineering Insulated Homes	Green Engineering Thermal Energy Transfer Properties of Matter Natural Resources Earth and Human Activity	3.2.6-8.B 3.2.6-8.M 3.2.6-8.N 3.2.6-8.R 3.3.6-8.M 3.3.6-8.N	3.4.6-8.G 3.4.6-8.H	3.5.6-8.B 3.5.6-8.G 3.5.6-8.H 3.5.6-8.M 3.5.6-8.N 3.5.6-8.O	3.5.6-8.P 3.5.6-8.Q 3.5.6-8.R 3.5.6-8.S 3.5.6-8.V 3.5.6-8.X