			Grade 3 – Force and Motion
	3PS.C.3	3PS.C.3	3PS.C.3
00	What force pulls objects toward Earth?	What is the term used when one object crashes into another object?	What force can pull objects containing iron across a distance?
\$1	(gravity)	(collision)	(magnetism)
	3PS.C.4	3PS.C.4	3PS.C.4
0	True or False?	What is the term used to describe	True or False?
10	Kicking a soccer ball applies a push.	the measure of the pull of gravity on an object?	Dragging a sled applies a push force.
\$	(true)	(weight)	(false – it applies a pull)
	3PS.C.1	3PS.C.2	3PS.C.1
0	True or False?	True or False?	Three cars are driving down the
10	When giving directions to a location it can be easier to use landmarks.	The fastest route between two points is a straight line	road. First a red car, than a blue care than a green car. Which car is in front?
$\Theta$	(true)	(true)	(the red car)
	3PS.C.1	3PS.C.2	3PS.C.2
\$100	A marble sits at the top of ramp. It is pushed and rolls to the bottom. What is the position of the marble before it moves? (at the top of the ramp)	It takes 2 minutes to get from a classroom to the water fountain. How long will it take to go from the classroom to the water fountain and back to the classroom?	How do you know an object has moved? <i>(the object changed position)</i>
		(4 minutes)	

			Grade 3 – Force and Motion
	3PS.C.3	3PS.C.3	3PS.C.3
\$100	What force pulls objects toward Earth?	What is the term used when one object crashes into another object?	What force can pull objects containing iron across a distance?
(	3PS.C.4	3PS.C.4	3PS.C.4
00	True or False?	What is the term used to describe the measure of the	True or False?
\$1	Kicking a soccer ball applies a push.	pull of gravity on an object?	Dragging a sled applies a push force.
	3PS.C.1	3PS.C.2	3PS.C.1
00	True or False?	True or False?	Three cars are driving down the road. First a red car, than
\$1	When giving directions to a location it can be easier to use landmarks.	The fastest route between two points is a straight line.	a blue care than a green car. Which car is in front?
	3PS.C.1	3PS.C.2	3PS.C.2
\$100	A marble sits at the top of ramp. It is pushed and rolls to the bottom. What is the position of the marble before it moves?	It takes 2 minutes to get from a classroom to the water fountain. How long will it take to go from the classroom to the water fountain and back to the classroom?	How do you know an object has moved?

			Grade 3 – Force and Motion
	3PS.C.1	3PS.C.1	3PS.C.1
200	What term is used to describe the change in position over a period of time?	Mr. Jones room is three rooms past the music room. What does this statement identify?	The shoes are in the room. What other information is needed to find the shoes.
\$	(speed)	(location)	(e.g., which room, what are the shoes next to in the room)
	3ES.C.2	3PS.C.2	3PS.C.2
200	Identify two values that need to be measured when finding the speed of an object.	If it takes you 3 minutes to ride your bike 3 blocks. How long will it take to ride 5 blocks.	It usually takes you 10 minutes to walk to school. If you had only 5 minutes to walk to school, what
	(distance and time)	(5 minutes)	would have to change?
<del>0)</del>			(the speed you walk)
_	3PS.C.3	3PS.C.3	3PS.C.3
200	Explain why a ball thrown up in the air falls back to Earth.	Explain how one magnet can move another magnet without touching it (using a non-contact force).	Explain how a magnet uses a contact force.
\$	(gravity is a force that pulls objects toward Earth)	(like magnet poles will repel each other – e.g., N-N or S-S)	(when opposite poles attract – e.g., S-N or N-S)
	3PS.C.4	3PS.C.4	3PS.C.4
\$200	Identify two forces. (push and pull)	What is friction? (A force between two surfaces rubbing against each other).	A girl is uses force to pull a wagon on the side walk. What will have to increase for her to pull the same wagon through the sand?
<b>U</b>			(force)

			Grade 3 – Force and Motion
0	3PS.C.1	3PS.C.1	3PS.C.1
00	What term is used to describe the change in position over a	Mr. Jones room is three rooms past the music room. What	The shoes are in the room. What other information is
\$	period of time?	does this statement identify?	needed to find the shoes.
	3ES.C.2	3PS.C.2	3PS.C.2
\$200	ldentify two values that need to be measured when finding the speed of an object.	If it takes you 3 minutes to ride your bike 3 blocks. How long will it take to ride 5 blocks.	It usually takes you 10 minutes to walk to school. If you had only 5 minutes to walk to school, what would have to change?
	3PS.C.3	3PS.C.3	3PS.C.3
\$200	Explain why a ball thrown up in the air falls back to Earth.	Explain how one magnet can move another magnet without touching it (using a non- contact force).	Explain how a magnet uses a contact force.
•	3PS.C.4	3PS.C.4	3PS.C.4
\$200	Identify two forces.	What is friction?	A girl is uses force to pull a wagon on the side walk. What will have to increase for her to pull the same wagon through the sand?

			Grade 3 – Force and Motion
\$300	3PS.C.1 Mr. Smith's classroom is next to Mrs. Young, and two classrooms away from Miss. Nagy. What does this statement identify? ( <i>location</i> )	3PS.C.1 A ball is hidden in a classroom. What would help you find the ball? <i>(What is the ball next to or it's</i> <i>relative position)</i>	<b>3PS.C.2</b> What 3 things are needed to predict a change in motion? of object, strength of, of force. (mass, force, direction)
\$300	3PS.C.2 The signs on the highway show 65 mph (miles per hours.) What does this sign inform motorists? <i>(maximum speed to travel)</i>	3PS.C.3 Name 3 types of contact and/or non-contact forces. (e.g., push, pull, gravity, magnetism, and friction)	3PS.C.3 A boy rides a bike. He begins by peddling faster, and then he comes to a stop sign a puts on his break. Next he coasts down a hill. Identify the 3 different types of forces that occurred during the boy's bike ride. (contact/push, friction, gravity)
\$300	3PS.C.4 You have three boxes; each box is covered with a different material: carpet, sand paper, and rubber. Choose the box that is easier to push on a tile floor. Explain why it is the easiest to push. <i>(carpet due to less friction)</i>	3PS.C.4 A student predicts that a heavier ball will roll farther than a lighter ball. What variable is this student testing? <i>(weight/mass)</i>	3PS.C.4 Identify the forces that occur when two students are riding a see saw (teeter totter). <i>(push, gravity)</i>

			Grade 3 – Force and Motion
\$300	3PS.C.1 Mr. Smith's classroom is next to Mrs. Young, and two classrooms away from Miss. Nagy. What does this statement identify?	3PS.C.1 A ball is hidden in a classroom. What would help you find the ball?	3PS.C.2 What 3 things are needed to predict a change in motion? of object, strength of , of force.
\$300	3PS.C.2 The signs on the highway show 65 mph (miles per hours.) What does this sign inform motorists?	3PS.C.3 Name 3 types of contact and/or non-contact forces.	<ul> <li>3PS.C.3</li> <li>A boy rides a bike. He begins by peddling faster, and then he comes to a stop sign a puts on his break. Next he coasts down a hill. Identify the 3 different types of forces that occurred during the boy's bike ride.</li> </ul>
\$300	3PS.C.4 You have three boxes; each box is covered with a different material: carpet, sand paper, and rubber. Choose the box that is easier to push on a tile floor. Explain why it is the easiest to push.	3PS.C.4 A student predicts that a heavier ball will roll farther than a lighter ball. What variable is this student testing?	3PS.C.4 Identify the forces that occur when two students are riding a see saw (teeter totter).

			Grade 3 – Force and Motion
	3PS.C.1	3PS.C.1	3PS.C.2 Students measured that it took a toy
\$400	A student predicts a heavier ball will roll farther than a lighter ball. Name 2 measuring tools needed to test this prediction and the 2 things that will be measured. (scale to measure mass of balls, tape measure to measure distance rolled)	(The globe is on top of the table, next to the books and apple.)	car 30 seconds to travel 60 cm. How far did the car travel in 1 second? (60cm./30sec. is 2cm./sec)
\$400	3PS.C.2 A student leaves school, stops at the library, and then at the store, next he goes home. It takes him 60 minutes to get home. The student lives 1 mile from his house. What was the student's speed in hours to get home? (1mile/1hour is 1 mph)	3PS.C.3 Identify the forces that act on two balls that roll down a ramp towards each other. (gravity, contact, friction)	3PS.C.3 The two cars with magnets started on opposite ramps and rolled towards each other. What are the forces, what will result as the cars get closer, why do the cars stop? S N S (gravity, non-contact (repel), friction)
\$400	3PS.C.3 What MUST happen in order to change the direction of an object's motion? (A force must be applied to the object – e.g., wind blowing a leaf)	<ul> <li>3PS.C.4</li> <li>What is it easier to push a heavy box across a smooth floor than it is to push the same box over a carpeted floor?</li> <li>(There is more friction when moving the box on the carpet than on the floor)</li> </ul>	<ul> <li>3PS.C.4 Explain why it uses less force to move a large pile of soil using a wagon than by individual shovel scoops.</li> <li>(a wagon distributes the weight of the soil over the 4 wheels, allowing more weight to be carried over the distance at one time)</li> </ul>

			Grade 3 – Force and Motion
	3PS.C.1	3PS.C.1	3PS.C.2
	A student predicts a heavier	Describes the globe's position.	Students measured that it took
Ο	ball will roll farther than a		a toy car 30 seconds to travel
0	ignier ball. Name 2 measuring		60 cm. How lar did the car
4	prediction and the 2 things		traver in 1 second?
Ś	that will be measured.		
	3PS.C.2	3PS.C.3	3PS.C.3
Ο	the library, and then at the store.	two balls that roll down a ramp	opposite ramps and rolled towards
Ю	next he goes home. It takes him	towards each other.	each other. What are the forces, what
4(	60 minutes to get home. The		the cars stop?
Å	student lives 1 mile from his		S N N S
•	speed in hours to get home?		
	What MUST happen in order to	What is it easier to push a	Explain why it uses less force to
Õ	change the direction of an	heavy box across a smooth	move a large pile of soil using
O	object's motion? Give one	floor than it is to push the same	a wagon than by individual
4	example.	box over a carpeted floor?	shovel scoops.
\$			

		Grad	le 4 – Matter, Physical and Chemical Change
	4PS.A.1	4PS.A.1	4PS.A.1
100	What occurs when the matter changes physical properties without changing its structure?	<b>True or False?</b> Ice melting is a physical change.	What occurs when two or more substances combine to create a new substance with different
Ś	(physical change)	(true)	(chemical change)
\$100	4PS.A.2 What occurs when two or more substances combine to create a new substance with different properties? <i>(chemical change</i>	4PS.A.2 True or False? Burning paper is a physical change. <i>(false)</i>	4PS.A.2 What occurs when two or more substances combine to create a new substance with different properties? <i>(chemical change)</i>
\$100	4PS.B.3 A bag contains a rubber ball, an iron nail, and a copper penny. Which of the following objects would be attracted to a magnet? <i>(iron nail)</i>	4PS.B.3 True or False? A magnet will attract a paper clip. <i>(true</i> )	4PS.B.3 What property is compared with a cotton ball and steel wool? <i>(hardness</i> )
\$100	4PS.B.4 What has a fixed volume and shape? <i>(solid)</i>	4PS.B.4 What takes the shape of the container? <i>(liquid</i> )	4PS.B.4 What has no fixed shape and no fixed volume <i>(gas</i> )

		Grad	e 4 – Matter, Physical and Chemical Change
	4PS.A.1	4PS.A.1	4PS.A.1
00	What occurs when the matter changes physical properties	True or False?	What occurs when two or more substances combine to
\$1	without changing its structure?	Ice melting is a physical change.	create a new substance with different properties?
	4PS.A.2	4PS.A.2	4PS.A.2
00	What occurs when two or more substances combine to	True or False?	more substances combine to
\$10	create a new substance with different properties?	Burning paper is a physical change.	create a new substance with different properties?
	4PS.B.3	4PS.B.3	4PS.B.3
00	A bag contains a rubber ball, an iron nail, and a copper		What property is compared with a cotton ball and steel
\$	objects would be attracted to a magnet?	clip.	WOOI?
	4PS.B.4	4PS.B.4	4PS.B.4
3100	What has a fixed volume and shape?	What takes the shape of the container?	What has no fixed shape and no fixed volume
<del>V)</del>			

		Grad	le 4 – Matter, Physical and Chemical Change
	4PS.A.1	4PS.A.1	4PS.A.1
00	Identify 2 properties of a cotton ball.	Explain what happens to ice molecules as they are heated?	A class goes on a camping trip. The teacher cuts wood for a fire, makes a fire, and then boils water over the fire.
	(e.g. soft, color, ball shape, solid.)		Identify each of the changes that took
N	(	(molecules move faster, ice will	place?
$\Theta$		melt)	(saw wood=physical; fire=chemical; boil water=physical)
	4PS.A.2	4PS.A.2	4PS.A.2
200	Identify two physical properties of a piece of iron.	Why are fireworks a chemical reaction?	A student uses steel wool to wash a pot. After a few days the steel wool has a brownish look to it. Explain what the brownish item is and is it a physical
\$	(hard, gray, has weight, attracted to magnets, conducts heat, electricity, and sound)	(creates light, heat and sound, not reversible, something new is made)	or chemical change? (rust, chemical change)
	4PS.B.3	4PS.D5	4PS.D5
00	How could you separate a mixture of iron shavings and sand?	When heating a liquid to measure its boiling point, what safety equipment is most helpful?	What are two ways to heat a piece of metal without the use of tools?
\$2	<i>(use a magnet, the magnet will attract the iron shavings but not the sand)</i>	(goggles, hot pads)	(Rubbing, bending back and forth repeatedly)
	4PS.B.4	4PS.B.4	4PS.B.4
00	What is the main difference between a solid and a liquid?	What change happens to liquid water when it is cooled to 0°C.?	In which state of matter does a substance always fill its container?
\$2(	(Solids have a definite shape)	(It starts to change from a liquid to a solid)	(gas)

		Grad	le 4 – Matter, Physical and Chemical Change
\$200	4PS.A.1 Identify 2 properties of a cotton ball.	4PS.A.1 Explain what happens to ice molecules as they are heated?	<ul> <li>4PS.A.1         <ul> <li>A class goes on a camping trip.</li> <li>The teacher cuts wood for a fire, makes a fire, and then boils</li> <li>water over the fire. Identify each of the changes that took place?</li> </ul> </li> </ul>
\$200	4PS.A.2 Identify two physical properties of a piece of iron.	4PS.A.2 Why are fireworks a chemical reaction?	A student uses steel wool to wash a pot. After a few days the steel wool has a brownish look to it. Explain what the brownish item is and is it a physical or chemical change?
\$200	4PS.B.3 How could you separate a mixture of iron shavings and sand?	4PS.D5 When heating a liquid to measure its boiling point, what safety equipment is most helpful?	4PS.D5 What are two ways to heat a piece of metal without the use of tools?
\$200	4PS.B.4 What is the main difference between a solid and a liquid?	4PS.B.4 What change happens to liquid water when it is cooled to 0°C.?	4PS.B.4 In which state of matter does a substance always fill its container?

		Grad	e 4 – Matter, Physical and Chemical Change
\$300	4PS.A.1 Identify the 3 states of matter. <i>(solid, liquid, gas)</i>	4PS.A.1 Explain the differences in water molecules as a solid, liquid, and gas. (solid=pack close together; liquid=farther apart; gas=very far apart)	<ul> <li>4PS.A.2 <ul> <li>A chemical change results as new materials are made. What two new materials are made when a piece of wood is on fire?</li> <li>(soot, heat, fire, carbon dioxide)</li> </ul> </li> </ul>
\$300	4PS.A.2 Identify 3 items that are attracted to a magnet. (paper clip, steel toy)	<ul> <li>4PS.A.2</li> <li>Mixing salt and water is a physical change, explain why?</li> <li>(not different from the original, still salt and water, nothing new made, can be reversed)</li> </ul>	<ul> <li>4PS.A.3 <ul> <li>A teacher places many different items in a tub made of many different materials. What could students do to find out if there are metals in the mixture?</li> <li>(run a strong magnet through the mixture)</li> </ul> </li> </ul>
\$300	4PS.B.3 Students crush Total cereal in a closed plastic bag. Next, students take a magnet and sweep it over the surface of the bag and discover that some particles are attracted to the magnet. What might this particle be? <i>(iron)</i>	4PS.B.4 A teacher fills a balloon with air and another balloon with helium. The balloon with helium floats, explain why. <i>(Helium is lighter than air)</i>	<ul> <li>4PS.D.5         Some Native Americans created fire by rubbing two stick together.         Explain why rubbing sticks could make fire.         (rubbing the sticks increased the temperate of the sticks allowing enough heat to create a fire.     </li> </ul>

		Grad	e 4 – Matter, Physical and Chemical Change
	4PS.A.1	4PS.A.1	4PS.A.2
\$300	Identify the 3 states of matter.	Explain the differences in water molecules as a solid, liquid, and gas.	A chemical change results as new materials are made. What two new materials are made when a piece of wood is on fire?
	4PS.A.2	4PS.A.2	4PS.A.3
\$300	Identify 3 items that are attracted to a magnet.	Mixing salt and water is a physical change, explain why?	A teacher places many different items in a tub made of many different materials. What could students do to find out if there are metals in the mixture?
\$300	4PS.B.3 Students crush Total cereal in a closed plastic bag. Next, students take a magnet and sweep it over the surface of the bag and discover that some particles are attracted to the magnet. What might this particle be?	4PS.B.4 A teacher fills a balloon with air and another balloon with helium. The balloon with helium floats, explain why.	4PS.D.5 Some Native Americans created fire by rubbing two stick together. Explain why rubbing sticks could make fire.

		Grad	e 4 – Matter, Physical and Chemical Change
\$400	4PS.A.1 Name 4 properties of matter. (shape, color, texture, mass, volume, hardness, magnetic, conductor, insulator etc.)	<ul> <li>4PS.A.1 <ul> <li>A class placed water inside an air tight bag and hung the bag on a window that got plenty of sunlight. Identify the type of change that occurs. Describe the changes in the states of water that occur in the bag.</li> <li>(physical change; liquid, gas, liquid)</li> </ul> </li> </ul>	<ul> <li>4PS.A.2 <ul> <li>A balloon filled with baking soda is placed on a bottle filled with vinegar.</li> <li>Explain the changes to the balloon, and changes with the mixing of baking soda and vinegar.</li> <li>(balloon change in size=physical change; vinegar &amp; baking soda made a gas and changed temperature =chemical change</li> </ul> </li> </ul>
\$400	4PS.A.2 Salt water is a physical change, how do separate the salt and water? <i>(evaporate the water)</i>	4PS.A.2 Mixing baking soda and vinegar is a chemical change, explain why? (bubbling, gas is produced, not reversible, chemical properties are different from the original material)	4PS.B.3 What is the best way to separate a mixture of sand and small pebbles? (Strain the sand out with a strainer, the hole need to be small enough for just the sand and not the pebbles)
\$400	<ul> <li>4PS.B.3 Name four common properties used to sort trash.</li> <li>(paper, glass, plastic, and metal or any other reasonable response)</li> </ul>	4PS.B.4 Vinegar is a liquid at room temperature. It is colorless like water. In what other way are vinegar and water alike? <i>(both will turn to a gas when heated)</i>	<ul> <li>4PS.D.5 <ul> <li>A student riding his bike down a long hill.</li> <li>He rides his bike over a sharp object</li> <li>which punches a hole in the tire. As the student tries to change the tire he notices that the tire is very hot. Explain why the tire is so hot.</li> </ul> </li> <li>(while riding down hill the breaks rubbed against the tire causing heat)</li> </ul>

		Grad	e 4 – Matter, Physical and Chemical Change
	4PS.A.1	4PS.A.1	4PS.A.2
	Name 4 properties of matter.	A class placed water inside an	A balloon filled with baking
ğ		air tight bag and hung the bag	soda is placed on a bottle
Q		on a window that got plenty of	filled with vinegar. Explain the
4		sunlight. Identify the type of	changes to the balloon, and
$\mathbf{A}$		change that occurs. Describe	changes with the mixing of
		the changes in the states of	baking soda and vinegar.
	4PS A 2	4PS A 2	4PS B 3
	Salt water is a physical	Mixing baking soda and	What is the best way to
	change, how do separate the	vinegar is a chemical change.	separate a mixture of sand
X	salt and water?	explain why?	and small pebbles?
Ċ			
<b>V</b>			
↔			
	4PS.B.3	4PS.B.4	4PS.D.5 A student riding his hike down a
	Name four common properties	temperature. It is colorless like	A student haing his bike down a long hill. He rides his bike over a
õ		temperature. It is coloness like	sharp object which punches a
0		water. III what other way are	hole in the tire. As the student
4		vinegal and water alike?	tries to change the tire he
Á			notices that the tire is very hot.
$\checkmark$			Explain why the tire is so hot.

			Grade 5 – Energy
\$100	5PS.D.1 To complete an experiment a student needs water at 80°F. What tool can be used to measure the water temperature? <i>(thermometer)</i>	5PS.D.1 How is thermal energy measured? <i>(temperature)</i>	5PS.D.2 What is it called when heat moves between objects that touch each other? <i>(conduction)</i>
\$100	5PS.D.2 Why is metal used to make pots and pans? (metal is good conductor of thermal energy)	5PS.E.3 Some appliances plug into wall outlets. What kind of energy do these appliances use? <i>(electrical)</i>	5PS.E.3 What is created when a nail is wrapped with a wire and attached to the positive and negative ends of a battery? <i>(electromagnet)</i>
\$100	5PS.E.4 In a simple circuit with a switch, what position must the switch be in for the light to be on? <i>(closed)</i>	5PS.E.4 In a circuit, what is the purpose of a battery? (to serve as a source of electricity or energy)	5PS.F.5 What happens when a light ray hits a mirror? <i>(it reflects)</i>
\$100	5PS.F.5 What type of matter will sound move through the fastest? <i>(solid)</i>	5PS.F.6 What occurs when sound waves reflect/bounce off a canyon wall? <i>(echo)</i>	5PS.F.7 What causes sound? (vibrations)

			Grade 5 – Energy
\$100	5PS.D.1 To complete an experiment a student needs water at 80°F. What tool can be used to measure the water temperature?	5PS.D.1 How is thermal energy measured?	5PS.D.2 What is it called when heat moves between objects that touch each other?
\$100	<sup>₅PS.D.2</sup> Why is metal used to make pots and pans?	5PS.E.3 Some appliances plug into wall outlets. What kind of energy do these appliances use?	5PS.E.3 What is created when a nail is wrapped with a wire and attached to the positive and negative ends of a battery?
\$100	5PS.E.4 In a simple circuit with a switch, what position must the switch be in for the light to be on?	5PS.E.4 In a circuit, what is the purpose of a battery?	5PS.F.5 What happens when a light ray hits a mirror?
\$100	5PS.F.5 What type of matter will sound move through the fastest?	5PS.F.6 What occurs when sound waves reflect/bounce off a canyon wall?	5PS.F.7 What causes sound?

			Grade 5 – Energy
\$200	5PS.D.1 What type of energy causes the evaporation of water from lakes, oceans and rives? (thermal energy from the sun – solar/radiant energy)	5PS.D.1 Identify the type of energy a thermometer can measure. <i>(thermal/heat energy)</i>	5PS.D.2 Which direction does thermal energy travel? Hot to cold or cold to hot? <i>(Hot to cold)</i>
\$200	<ul> <li>5PS.D.2</li> <li>Define "conductor" and give one example of a good conductor of heat energy.</li> <li>(A conductor is a material that allows heat energy to pass through quickly, e.g., Iron, copper, aluminum)</li> </ul>	5PS.E.3 Identify two types of energy a light bulb naturally gives off. (thermal (heat) and light)	<ul> <li>5PS.E.3 Identify the two types of energy that occur when electricity passes through a radio alarm clock.</li> <li><i>(light and sound, heat could also be possible)</i></li> </ul>
\$200	5PS.E.4 Will this simple circuit work? If not, what needs to be done to get it to work? (No. Wire needed to connec to negative end of battery)	5PS.E.4 Explain why a bulb will not light if the circuit is open. <i>(the electrons can not cross the gap)</i>	5PS.F.5 Explain why light appears to bend when it enters a glass of water. <i>(light changes speed)</i>
\$200	5PS.F.6 Explain what happens to the air near you and your eardrums when you hear a noise. (particles in the air vibrate, bumping into other particles until vibrating particles hit your eardrums and make them vibrate)	5PS.F.7 Describe the sound wave frequency of a very high pitch sound. (Fast. The greater the frequency, the higher the sound)	5PS.F.7 A student is creating a musical instrument with the same size rubber bands. What can he do to change the pitch? (have the rubber bands stretch at different lengths to change frequency)

			Grade 5 – Energy
\$200	5PS.D.1 What type of energy causes the evaporation of water from lakes, oceans and rives?	5PS.D.1 Identify the type of energy a thermometer can measure.	5PS.D.2 Which direction does thermal energy travel? Hot to cold or cold to hot?
\$200	5PS.D.2 Define "conductor" and give one example of a good conductor of heat energy.	5PS.E.3 Identify two types of energy a light bulb naturally gives off.	5PS.E.3 Identify the two types of energy that occur when electricity passes through a radio alarm clock.
\$200	5PS.E.4 Will this simple circuit work? If not, what needs to be done to get it to work?	5PS.E.4 Explain why a bulb will not light if the circuit is open.	5PS.F.5 Explain why light appears to bend when it enters a glass of water.
\$200	5PS.F.6 Explain what happens to the air near you and your eardrums when you hear a noise.	5PS.F.7 Describe the sound wave frequency of a very high pitch sound.	5PS.F.7 A student is creating a musical instrument with the same size rubber bands. What can he do to change the pitch?

			Grade 5 – Energy
\$300	<ul> <li>5PS.D.1</li> <li>Explain what type of pot handle would be best to have when cooking.</li> <li>(Plastic, good insulator, prevent burning. Some may choose a metal that does not conduct heat)</li> </ul>	<ul> <li>5PS.D.1</li> <li>What happens to water particles in a pot of water as the water heats up and begins to boil?</li> <li>(the particles begin to move faster)</li> </ul>	5PS.D.2 A student is wrapping several cold soda cans with different materials and then measuring which material best keeps the can cold. What is the student testing? <i>(best insulators)</i>
\$300	5PS.E.3 Identify the three types of energy that results when electricity passes through a turned on television. (light, sound, thermal energy/heat)	5PS.E.3 How does a toaster over use electricity? (Electricity flows through metal coils in a toaster oven. The electricity heats the coils which then toast the bread. Electrical energy changes to heat energy)	5PS.E.4 Identify the materials needed to create a simple circuit for a light bulb to light up. <i>(battery, light bulb, wire)</i>
\$300	5PS.F.5 People often used candles to light their homes before the twentieth century. Sometimes a candle was mounted on a wall in front of a small mirror. How did the mirror help to light the room? (the mirror reflected the candle light)	<ul> <li>5PS.F.6 <ul> <li>A group of friends formed a band, one of the friends parent agreed to have the band practice in the garage if they can figure out how to reduce the volume so that it will not bother the neighbors. How can this be done?</li> <li>(cover the walls with foam/fabric to absorb the sound)</li> </ul> </li> </ul>	5PS.F.7 Explain how a string telephone allows its users to hear? (the string vibrates carrying the vibration from the cup of one person to the cup of another person)

			Grade 5 – Energy
\$300	5PS.D.1 Explain what type of pot handle would be best to have when cooking.	SPS.D.1 What happens to water particles in a pot of water as the water heats up and begins to boil?	A student is wrapping several cold soda cans with different materials and then measuring which material best keeps the can cold. What is the student testing?
\$300	Identify the three types of energy that results when electricity passes through a turned on television.	How does a toaster over use electricity?	Identify the materials needed to create a simple circuit for a light bulb to light up.
\$300	5PS.F.5 People often used candles to light their homes before the twentieth century. Sometimes a candle was mounted on a wall in front of a small mirror. How did the mirror help to light the room?	5PS.F.6 A group of friends formed a band, one of the friends parent agreed to have the band practice in the garage if they can figure out how to reduce the volume so that it will not bother the neighbors. How can this be done?	5PS.F.7 Explain how a string telephone allows its users to hear?

			Grade 5 – Energy
\$400	5PS.D.1 How does a thermometer work? (volume of the liquid inside the thermometer increases as it is heated=higher temperature, and decreases as it is cooled=lower temperature) 5PS.E.3	<ul> <li>5PS.D.2 Amanda stirs cocoa into a glass of water at room temperature with a metal spoon. Vincent stirs cocoa into a cup of hot cocoa with another metal spoon. How does the temperature of the spoons compare? Why?</li> <li>(Amanda's spoon will be warmer because the thermal/heat energy from hot water will have transferred to spoon)</li> <li>5PS.E.4</li> </ul>	5PS.E.3 Name 4 forms electrical energy can take. <i>(light, sound, heat, motion)</i> 5PS.F.5
\$400	Explain how to increase the strength of an electromagnet. (have more current pass through the wire coils, increase the number of coils)	Your flashlight is not working. Name 3 things you might check to identify the problem. <i>(batter, bulb, connection)</i>	Why does an object look bigger when you view it through a hand lens? (a hand lens refracts light)
\$400	5PS.F.6 Why is it louder inside the gym than outdoors? (The sound is reflected off the walls and hard floor of the gym)	5PS.F.5 How is a rainbow formed? (light rays change speed/bend as they pass from air through drops of water)	5PS.F.7 Explain why sound travels faster through water than through air. (the molecules/particles in water are closer together than in air, this allows each molecule/particle to vibrate sooner in the water)

Grade 5 – El	nergy		
\$400	5PS.D.1 How does a thermometer work?	SPS.D.2 Amanda stirs cocoa into a glass of water at room temperature with a metal spoon. Vincent stirs cocoa into a cup of hot cocoa with another metal spoon. How does the temperature of the spoons compare? Why?	5PS.E.3 Name 4 forms electrical energy can take.
\$400	5PS.E.3 Explain how to increase the strength of an electromagnet.	5PS.E.4 Your flashlight is not working. Name 3 things you might check to identify the problem.	5PS.F.5 Why does an object look bigger when you view it through a hand lens?
\$400	5PS.F.6 Why is it louder inside the gym than outdoors?	5PS.F.5 How is a rainbow formed?	5PS.F.7 Explain why sound travels faster through water than through air.