INTEGRATED SCIENCE

Ms. Baker's Class - Caliber: ChangeMakers Academy

Summer Homework "Packet" – Summer 2019

Name:_____

My expectation for you over summer is to take some opportunities to look at the world around you through the eyes of a scientist. There are two sides to this document. The opposite side asks you to create a CER Statement. This side contains a number of options that I would like you to complete on a separate sheet of notebook paper that will function as your "Science Journal." Below, you will find a grid that includes a number of different assignments, each asking you to practice a different scientific skill. **CHOOSE TEN** of the following options (you do not need to do every single one, but of course you can if you want!) Remember, you are completing the tasks below on a separate sheet of paper (staple them together once you've completed your ten) MANY OF THESE TASKS MAY LOOK FAMILIAR IF YOU COMPLETED YOUR WORK LAST SUMMER…. FEEL FREE TO CHOOSE DIFFERENT ONES THIS SUMMER! Your work on this assignment gets better each year, so it's even okay to repeat a task, I love getting to see your skills grow and develop over time!

Task One In a class of 28 students, 12 students take the bus to school, 10 students walk, and 6 students ride their bicycles. Create a circle graph to display this data. Record your answer and circle graph in your journal.	**Task Two** Visit the website below to answer the two journal questions. https://www.usbg.gov/insects-garden Journal Questions: How can you identify insects from other animals? How do different insects grow? Give at least two examples.	**Task Three** Watch the video learn about photosynthesis and pollination. https://www.youtube.com/watch?v=3pD68uxRLkM Write an explanation in your journal about the importance of photosynthesis and pollination.	**Task Four** Use what you know about the physics of motion to design a roller coaster. Draw your design in your science journal. Also check out http://kids.discovery.com/games/build-play/build-a-coaster and build a virtual roller coaster. **Compare your designs.**	**Task Five** **Work Like a Scientist** Observe two different areas outdoors. Make a list of animals that you see in each area. Compare the list and describe the things that might affect the type of animals that will live in a particular area.
Task Six How could you show that the moon can sometimes be seen in the day sky? Investigate to find out. Record your research and explanation in your journal.	**Task Seven** Watch the video about the Solar System. https://www.youtube.com/watch?v=Qd6nLM2QlWw In your journal, write down what you saw the was interesting from the video and explain why.	**Task Eight** Take a walk outside. Observe the types of insects that you see. Journal Entry: How do the insects here interact with the environment?	**Task Nine** Saving water is more important than ever. Create a poster explaining why saving water is essential to the environment. Use items around your home to design your poster. Share your findings with your family.	**Task Ten** Matter exists in more than one state. Review the states of matter by using the link below. Remember to take the quiz at the end of the activity. http://bit.ly/4RHo3w For a sweet summer treat, complete the activity titled Solid to Liquid to Solid. http://tlc.howstuffworks.com/family/science-projects-for-kids-states-of-matter1.htm
Task Eleven Suppose 33 percent of the 50 tons of wood produced in one year by a forest is consumed by termites and other insects. How many tons do the insects eat? Record your answer in your journal.	**Task Twelve** Calculate the density of the following 1_L samples of ocean water. Sample A has a mass of 1.01 kg; Sample B has a mass of 1.06 kg. Which sample would likely have the higher salinity? Explain your answer in your journal.	**Task Thirteen** **Simple machines** make work easier for us by allowing us to push or pull over increased distances. Review the six types of simple machines by clicking on the name then complete each activity. Use the following link: http://bit.ly/11FE75.	**Task Fourteen** View the simulation at the site below. Explain how the lake changes as the water flowing into the lake increases. Include how the changes may impact the organisms that live in the lake ecosystem. http://learn.genetics.utah.edu/content/gsl/water/	**Task Fifteen** **News Report:** Something strange has happened to the local pond. It is covered with green scum and dead fish are floating on the surface. Write a news report explaining to the public what has happened. Remember to use your journal. Draw and label a diagram of this pond for your report.
Task Sixteen Review what makes up a Galaxy by going to link below to guide you: http://bit.ly/kp0uxm. In your journal, write down five interesting facts about the link you observed above.	**Task Seventeen** Visit the "Ocean Portal" Smithsonian Museum National Museum of Natural History website. Explain the process that some organisms have that allow them to make their own light. http://ocean.si.edu/slideshow/deep-ocean-diversity	**Task Eighteen** Everything in the solar system rotates around the sun. Review the solar system using the following link. Remember to take the quiz at the end. http://bit.ly/9tbfzh	**Task Nineteen** In your journal, answer the following questions about the Water Cycle. Include an illustration. Most of the water that evaporates on the earth comes from which source? What is the source of energy for the hydrologic or water cycle? How does the temperature impact the water cycle?	**Task Twenty** As earth spins, sunrise occurs gradually across the United States Find out how this natural event influenced the invention of different time zones. Record your research in your journal.

CER Statement: A primary job of scientists is to understand the world around them. In the CER below, I would like you to take a natural phenomenon you don't understand. Research it, find out how it works, and explain in a CER your new understanding. I'd love for you to explain something you are able to observe over summer, but there are some ideas listed below to help you if you need it. (please make your own phenomenon question if you can!)

Some Ideas (examples of natural phenomena): Why do thunder and lightning happen at different times? Why does the sky change color at sunset? Why does water feel colder than air at the same temperature? Why does glass break more easily than other solids? Why do potholes appear in the road? Why do sliced apples turn brown when they're left out? What is moving – us or the sky? What actually causes the magnets to stick to your fridge?

Natural Phenomenon You are Explaining:

Claim: (how does it work?)

Evidence: (what did you see or learn?)

Reasoning: (how did what you see or learn explain how the phenomenon works?)