Cedar Park 7th Grade Science



2017 - 2018 School Year

Welcome to the 2017-2018 school year here at Cedar Park and Amber Jordan’s Science Class. This course syllabus is intended to communicate what we will be learning and how it will be assessed. Cedar Park reports academic progress as well as progress in personal management and behavior. Academic progress is measured and reported using the Middle Years Program subject-specific criteria. Courses are organized so that learners that master the aims and objectives of the Middle Years Program also master the learning targets of the Beaverton School District. Personal management and behavior targets are linked directly to academic performance.

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Leslie Redman

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**District Goal for 2010-15:**

All students will show continuous progress toward their personal learning goals, developed in collaboration with teachers and parents, and will be prepared for post-secondary education and career success.

MYP Criteria for 7th Grade. This is how we will assess the learning.

**Science Criterion A: Knowing and understanding**

1. outline scientific knowledge
2. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations
3. interpret information to make scientifically supported judgments.

**Science Criterion B: Inquiring and designing 7/8**

1. describe a problem or question to be tested by a scientific investigation
2. outline a testable hypothesis and explain it using scientific reasoning
3. describe how to manipulate the variables, and describe how data will be collected
4. design scientific investigations.

**Science Criterion C: Processing and evaluating 7/8**

1. present collected and transformed data
2. interpret data and describe results using scientific reasoning
3. discuss the validity of a hypothesis based on the outcome of the scientific investigation
4. discuss the validity of the method
5. describe improvements or extensions to the method.

**Science Criterion D: Reflecting on the impacts of science 7/8**

1. describe the ways in which science is applied and used to address a specific problem or issue
2. discuss and analyze the various implications of using science and its application in solving a specific problem or issue
3. apply communication modes effectively
4. document the work of others and sources of information used.

**Design Criterion A: Inquiry and Analyzing 7/8**

1. explain and justify the need for a solution to a problem
2. construct a research plan, which states and prioritizes the primary and secondary research

needed to develop a solution to the problem

1. analyze a group of similar products that inspire a solution to the problem
2. develop a design brief, which presents the analysis of relevant research.

**Design Criterion B: Developing Ideas 7/8**

1. develop a design specification which outlines the success criteria for the design of a solution

based on the data collected

1. present a range of feasible design ideas, which can be correctly interpreted by others
2. present the chosen design and outline the reasons for its selection
3. develop accurate planning drawings/diagrams and outline requirements for the creation of

the chosen solution.

**Design Criterion C: Creating the Solution 7/8**

1. construct a logical plan, which outlines the efficient use of time and resources, sufficient for peers to be able to follow to create the solution
2. demonstrate excellent technical skills when making the solution
3. follow the plan to create the solution, which functions as intended explain changes made to the chosen design and the plan when making the solution
4. present the solution as a whole.

**Design Criterion D: Creating the Solution 7/8**

1. describe detailed and relevant testing methods, which generate accurate data, to measure the success of the solution
2. explain the success of the solution against the design specification
3. describe how the solution could be improved
4. describe the impact of the solution on the client/target audience.

Long Term Academic Targets for 7th Grade Science Beaverton School District has developed year-long academic learning targets which are aligned with Common Core standards. These targets are consistent across all Beaverton middle schools. Please refer to the end of this document for 7th grade Science learning targets.

**Assessment of Learning.** Cedar Park uses the Standards Based Learning System of the Beaverton School District. The key elements of this system are

* Clear learning targets in all content areas at each grade level;
* All classroom instruction and assessments are aligned to learning targets;
* Consistent scoring guides (rubrics) to determine a student’s level of learning;
* Use of formative assessment practices;
* Focus on student growth;
* Regular reporting of progress on significant skills & knowledge placing the highest value on teacher judgment and expertise.

**Personal Management / Behavior Learning Targets.** Academic behaviors are absolutely critical for student success. For this reason, these behaviors must be reported separately to all stakeholders. All teachers will report areas of strength and areas of improvement needed in three standards: manages student responsibilities, self-directs learning, and effectively communicates within a group.

**Access to Information about this course.**

**\*ParentVUE:** ParentVue is a web portal that allows parents and guardians to access real‐time information related to their students. Parents/guardians can view their student's calendars, attendance, schedules, grade book, report card, school information, emergency contacts and other information. Instructions about how to use ParentVue can be found at <https://www.beaverton.k12.or.us/PS/Pages/parentvue_studentvue.aspx>

**Attendance Information.**

**Student Responsibilities**

* It is the responsibility of the student to attend classes.
* It is the responsibility of the student to consult teacher websites and planners to know about assignments missed due to absences and to complete them.
* It is the responsibility of the student to arrange notification (note, phone call) from parent/guardian regarding absence within the appropriate time.
* It is the responsibility of the student to arrive in class on time, ready to learn.

**Parent Responsibilities**

* It is the responsibility of the parent to see that their student attends classes unless under condition of personal or family illness, legal or family obligations, religious holiday, or a significant family emergency.
* It is the responsibility of the parent to call the Attendance Line at **503-356-2561** to report an absence by 3:40 p.m. on the day of the absence.

**School Responsibilities**

* It is the responsibility of the school to provide a quality education.
* It is the responsibility of the school to accurately record absences and provide notice to parents when students are not present.
* It is the responsibility of the school to comply with Oregon law in determining whether an absence is excused or unexcused according to Oregon Revised Statutes.

**Academic Learning Targets**

**1 – SCIENTIFIC INQUIRY**: I can design and conduct a scientific investigation with controlled variables that answers a scientific question with data.

* I can form a question, hypothesis based on scientific principles and observations
* I can design a logical and safe experiment and clearly communicate my procedure
* I can collect and present relevant data in an organized way
* I can analyze data and/or observations and give evidence based explanations and identify obvious sources of error. I can communicate my results and suggest improvements.

**2 – ENGINEERING DESIGN**: I can design, construct, test and evaluate a simple solution to a defined problem using appropriate tools and materials.

* Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
* I can evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
* I can analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
* I can develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

**3 – LANDFORM CHANGE**: I can explain and model how the Earth's surface changes over time.

* Engineering: I can design, construct, test and evaluate a simple solution to a defined problem using appropriate tools and materials.
* Informational Text: I can read and use informational texts about landform change to answer relevant questions
* Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process.
* Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and scales.
* I can analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

**4 – WEATHER**: I can explain how water influences weather, circulates in the ocean, and shapes the Earth's surface.

* Science Inquiry: I can collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.
* Informational Text: I can read and use informational texts about weather and climate to answer relevant questions.
* I can develop and use a model to describe how unequal heating and rotation of the Earth causes patterns of atmospheric and oceanic circulation that determine regional climates.
* I can develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity.

**6 – EARTH AND HUMAN ACTIVITIES**: I can evaluate natural processes and human activities that affect global environmental change.

* Science Inquiry: I can analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
* Informational Text: I can read and use informational texts about human impact on the earth to answer relevant questions
* I can apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
* I can ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.
* I can construct a scientific explanation based on evidence for how the uneven distributions of Earth’s mineral, energy, and groundwater resources are the result of past and current geoscience processes.

**7 – ENERGY FLOW IN ORGANISMS**: I can explain and model the processes that help cells move matter and provide energy for cell growth.

* Science Inquiry: I can construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
* Informational Text: I can read and use informational texts about energy flow in organisms to answer relevant questions
* I can develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

**8 – HEREDITY**: I can explain and model how living organisms pass traits from one generation to the next.

* Informational Text: I can read and use informational texts about reproduction and genetics to answer relevant questions
* Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

**9 – FORCES & INTERACTIONS:** I can identify and describe types of motion and forces and relate forces qualitatively to the laws of motion and gravitation.

* Science Inquiry: I can plan an investigation to provide evidence that the change in an object’s motion depends on the sum of the forces on the object and the mass of the object.
* Engineering: I can apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects.
* Informational Text: I can read and use informational texts about forces and motion to answer relevant questions
* I can identify and describe different types of motion, including: speed, velocity, and acceleration.
* I can identify and describe different types of forces and how they affect motion, including: friction, mass, balanced and unbalanced.
* I can explain Newton’s laws and identify them in examples.