

Academia Bilingüe de las Artes
Science Curriculum Map
7th Grade

CONTENT	SKILLS	ASSESSMENTS	ARTS INTEGRATION
<p><u>PHYSICAL SCIENCE</u></p> <ul style="list-style-type: none"> ✓ How do muscles produce energy to move our skeleton? ✓ What forces change motion? ✓ How do machines make work easier? ✓ How does mass effect changes in motion? 	<p><u>PHYSICAL SCIENCE</u></p> <ul style="list-style-type: none"> ✓ C12. Explain the relationship among force, distance, and work, and use the relationship ($W=F \times D$) to calculate work done in lifting heavy objects. ✓ C13. Explain how simple machines, such as inclined planes, pulleys and levers, are used to create mechanical advantage. ✓ C14. Describe how different types of stored (potential) energy can be used to make object move. ✓ C22. Calculate the average speed of a moving object and illustrate the motion of objects in graphs of distance over time. ✓ C23. Describe the qualitative relationships among force, mass and changes in motion. ✓ C24. Describe the forces acting on an object moving in a circular path. 	<p><u>PHYSICAL SCIENCE</u></p> <p>Application of Learning How will you engage student in a real life challenge?</p> <ul style="list-style-type: none"> ✓ Engaging Scenario: ✓ Situation: ✓ Challenge: ✓ Role: ✓ Audience: 	<p><u>PHYSICAL SCIENCE</u></p> <p>Printing:</p> <ul style="list-style-type: none"> ✓ Create “spin art” machine using thin, long, sharp object (pick up sticks, pencils) to pierce circular oak tag/poster board. Liquid paint will be squirted in the center and around the perimeter of the sharp object. Experiment with direction and amount of force (speed). After spinning, remove sharp object and print. <p>Poetry:</p> <ul style="list-style-type: none"> ✓ Choose a simple machine and write a poem/song describing its virtues. <p>Culinary Arts/Movement:</p> <ul style="list-style-type: none"> ✓ Plan a lunch to feed the endurance enzyme system (carbohydrates such as pasta and bread). Have this lunch prior to an afternoon when movement/dance exercise is performed

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			<p>that is designed to display the relationship between energy consumed and endurance energy exerted.</p> <p>Compare/contrast endurance of the same movement/dance exercise on a day when a typical lunch is served.</p> <p>Artists: Dolan Geiman Leonardo Da Vinci</p>

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<p><u>HUMAN BIOLOGY</u></p> <ul style="list-style-type: none"> ✓ How do cells reproduce? ✓ How is the hearing function connected to breathing? ✓ How do muscles move bones? ✓ Where do human babies come from? 	<p><u>HUMAN BIOLOGY</u></p> <ul style="list-style-type: none"> ✓ C15. Describe the basic structures of animal cell, including nucleus, cytoplasm, mitochondria and cell to support life. ✓ D16. Describe the structures of the human digestive, respiratory and circulatory systems, and explain how they function to bring oxygen and nutrients to the cells and expel waste materials. ✓ C17. Explain how the human musculo-skeletal system supports the body and allows movement. ✓ C25. Explain the similarities and differences in cell division in somatic and germ cells. ✓ C26. Describe the structure and function of the male and female human reproductive systems, including the process of egg and sperm production. ✓ C27. Describe how genetic information is organized in genes on chromosomes, and explain sex determination in humans. 	<p><u>HUMAN BIOLOGY</u></p> <p>Application of Learning How will you engage student in a real life challenge?</p> <ul style="list-style-type: none"> ✓ Engaging Scenario: ✓ Situation: ✓ Challenge: ✓ Role: ✓ Audience: 	<p><u>HUMAN BIOLOGY</u></p> <p>Fine Art/drawing:</p> <ul style="list-style-type: none"> ✓ Students will draw a portion of the human body (torso, arm, legs) to show the musculo-skeletal system. Drawings can be done in pencil/charcoal using Michelangelo as an inspiration. <p>Sculpture:</p> <ul style="list-style-type: none"> ✓ Clay sculptures of the human figure in motion using a live model that will start to walk and stop in midstream while students capture “the next step”. Music will be played as a backdrop for pacing the walk. <p>Caricatures:</p> <ul style="list-style-type: none"> ✓ Animal cell caricatures depicting nucleus, cell membranes and mitochondria in a humanistic/animalistic form.

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			<p>Painting:</p> <ul style="list-style-type: none">✓ Abstract paintings using magnified images of animal cells (nucleus, mitochondria, cytoplasm, cell membrane). <p>Dance/Music:</p> <ul style="list-style-type: none">✓ Dance created and performed in small groups by choosing a one minute musical composition and incorporating large and small muscle movements.✓ Students can also create “music” from small and large muscle movements. <i>Mi Cuerpo Hace Musica</i>, a Spanish song can be used for inspiration. <p>Artists: Michelangelo, Leonardo Da Vinci</p>
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