

Understanding the IB-PYP

The International Baccalaureate (IB) Primary Years Program (PYP) is underpinned by six transdisciplinary themes around which learning is planned. These are:

- Who we are
- Where we are in place and time
- How we express ourselves
- **How the world works**
- How we organize ourselves
- Sharing the planet

Students inquire into, and learn about, these globally significant issues in the context of **units of inquiry**, each of which addresses a **central idea** relevant to a particular transdisciplinary theme. **Lines of inquiry** are identified in order to explore the scope of the central idea for each unit. **Key concepts** are powerful, over-arching ideas that transcend individual subject-areas and allow students to develop a coherent, in-depth understanding. These units of inquiry collectively constitute the school's **program of inquiry**. At Valley Prep, the six transdisciplinary themes will be implemented gradually over the next three years. Our first theme is: *How the World Works*. This theme will be infused with STEAM activities which further develop the students' ability to problem-solve and think-critically ... two skills which are at the core of the IB-experience.

Transdisciplinary Theme: **How the World Works**

An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; and the impact of **scientific and technological advances** on society and on the environment.

Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Preschool will be exploring **HABITATS**.

Dates of this unit: October – November

Central Idea

Habitats support life

Lines of Inquiry

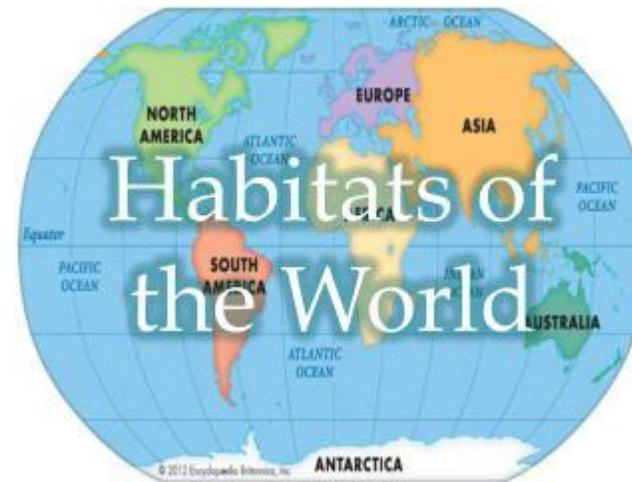
- Types of habitats
- Differences between habitats
- Interaction between habitats

Key Concepts

- Causation – Why is it like it is?
- Connection – How is it connected to other things?
- Function – How does it work?

Subject connections

- Science: Animal habitats
- Social Studies: Human habitats
- Language Arts: Stories include: I see a Kookaburral; The great kapok tree; You can't build a house if you're a hippo
- Art: Build a beaver dam
- Foreign Language: Puppets, songs, books, and vocabulary about habitats



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Pre-Kindergarten will be exploring **CONSTELLATIONS**.

Dates of this unit: October – November

Central Idea

Understanding the world through constellations

Lines of Inquiry

- Cultural stories explaining the stars
- Using stars to determine season/time of the year (calendar)
- How the stars are used for navigation

Key Concepts

- Change – How is it changing?
- Connection – How is it connected to other things?
- Function – How does it work?

Subject connections

- Science: Constellations
- Social Studies: Cultural stories explaining the stars
- Language Arts: Stories include: The apple orchard riddle; When riddles come rumbling; Our stars
- Art: Create a constellation using black paper marking the star points with jewels, then connecting the star points with a white colored pencil.
- Technology: Students will program Ozobots to trace the constellations



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Kindergarten will be exploring **MOVEMENT**.

Dates of this unit: October – November

Central Idea

Movement causes change

Lines of Inquiry

- Things that move
- How things move
- Results of movement

Key Concepts

- Function – How does it work?
- Causation – Why is it like it is?
- Change – How is it changing?

Subject connections

- Science: The Earth, Sun, and Seasons; Shadows
- Social Studies: Transportation and Societal Changes (then and now)
- Language Arts: Stories include: The loud book; Motion; Cause & Effect; Zoom!
- Technology: Students will use coding to demonstrate how movement creates change
- Art: create a painting using things that move including marbles, small toy vehicles and various gadgets with moving parts.
- Foreign Language: Transportation methods around the world



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. First Grade will be exploring **NEEDS vs WANTS**.

Dates of this unit: October – November

Central Idea

Our perception of needs and wants can change with technology.

Lines of Inquiry

- How technology supports/impacts sustainability
- Circumstances that lead to the development of important inventions and their impact
- Technology and inventions of the home, workplace and leisure activities

Key Concepts

- Change – How is it changing?
- Connection – How is it connected to other things?
- Perspective – What are the points of view?

Subject connections

- Science: Heat, light, and sound
- Social Studies: Needs vs. wants
- Language Arts: Stories include: So you want to be an inventor; When I was young in the mountains; Molly's pilgrim; Early schools
- Physical Education: Proper nutrition is a need
- Art: Students will experiment with various mediums starting with charcoal, one of the first 'drawing' materials known to man.
- Technology: Students will build different forms of transportation using Legos and K'NEX in the STEAM-lab.



Needs vs. Wants

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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Second Grade will be exploring **MATTER**.

Dates of this unit: October – November

Central Idea

Matter exists in many forms and can be changed.

Lines of Inquiry

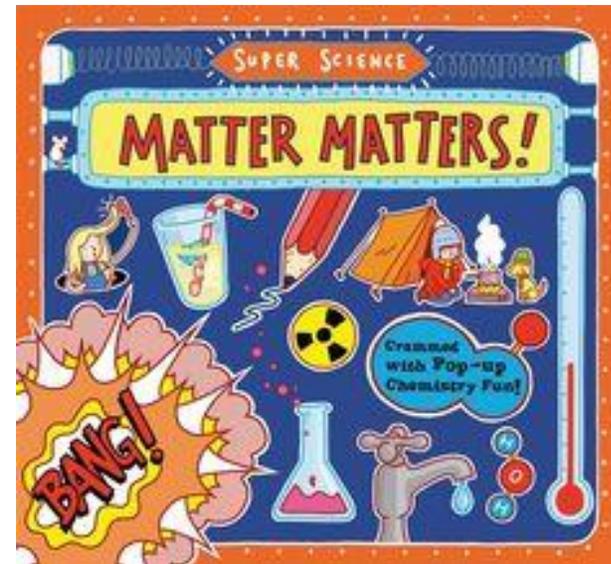
- Characteristics and properties of matter
- The physical and human process that work together to shape places and regions
- Properties of the earth and how they form
- Impact of changes in matter

Key Concepts

- Change – How is it changing?
- Form – What is it like?
- Function – How does it work?

Subject connections

- Science: Changes in matter
- Social Studies: Markets
- Language Arts: Stories include: Farming; Water's way; From seed to plant
- Physical Education: Proper exercise changes our bodies
- Art: Students will observe various mediums to see how the properties change and the visual differences that may occur.
- Foreign Language: Markets in France and Mexico
- Foreign Language: Foods around the world



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Third Grade will be exploring **TECHNOLOGY & CIVILIZATION**.

Dates of this unit: October – November

Central Idea

Civilizations evolve as a result of advances in technology

Lines of Inquiry

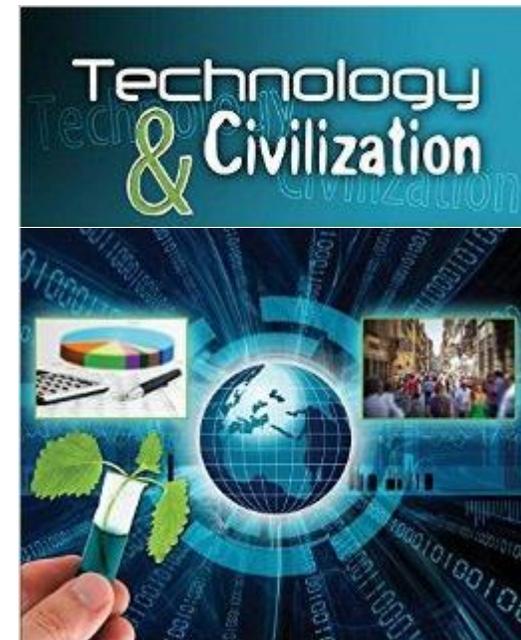
- What is force and what does it look like?
- How people respond to changes
- Changes and effects of technological growth

Key Concepts

- Change – How is it changing?
- Connection – How is it connected to other things?
- Function – How does it work?

Subject connections

- Science: Simple Machines
- Social Studies: Early Americans
- Language Arts: Stories include: Pieces of the sky; Machines; The first Americans
- Physical Education: Technology in physical education
- Technology: Students will use legos to build simple machines
- Art: Create a drawing by hand, then recreate the same drawing/image on their laptops (Kidpix)



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Fourth Grade will be exploring **HUMAN MIGRATION**.

Dates of this unit: October – November

Central Idea

An inquiry into the cause and effect of human migration as a response to challenges, risks, and opportunities

Lines of Inquiry

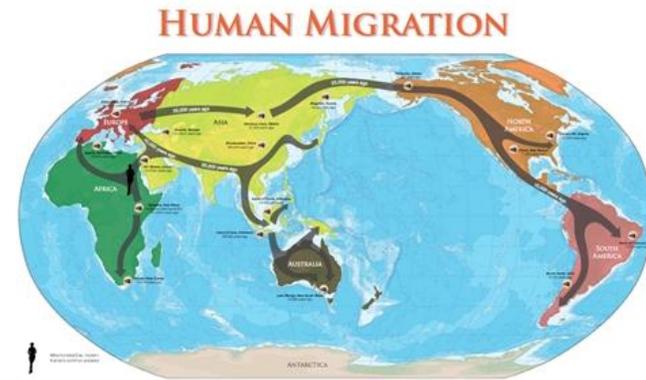
- Reasons why people migrate
- Migration throughout history
- Effects of migration on communities, cultures, and individuals

Key Concepts

- Change – How is it changing?
- Form – What is it like?
- Function – How does it work?

Subject connections

- Science: How the availability of minerals can force migration
- Social Studies: Migration patterns of Native Americans
- Language Arts: Stories include: Glaciers; The story of the Trail of Tears; Icebergs & Glaciers; Sing Down the Moon
- Physical Education: Migration
- Art: show through art how there are similarities and differences in tribal art according to location
- Technology: Students will build a Chumash canoe in the STEAM-lab
- Foreign Language: Family structures and our roots



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Fifth Grade will be exploring **DISCOVERIES THAT IMPACTED THE WORLD**.

Dates of this unit: October – November

Central Idea

Experimentation can lead to discoveries that impact the world

Lines of Inquiry

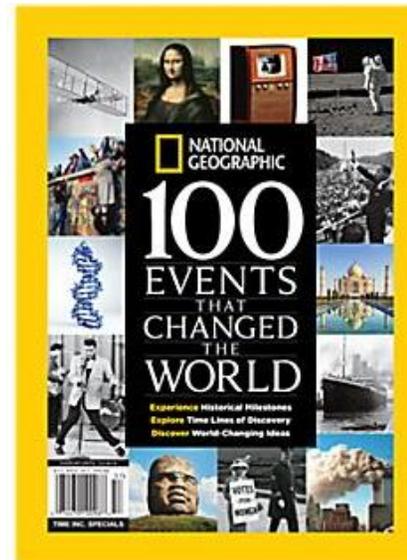
- The scientific process
- How scientific investigation can lead to new discoveries
- Discoveries that impact the world

Key Concepts

- Change – How is it changing?
- Form – What is it like?
- Function – How does it work?

Subject connections

- Science: Alternate Energy (wind, solar, water power)
- Social Studies: Early World Inventions
- Language Arts: Girls Think of Everything; Mistakes That Worked; Outward Dreams: Black Inventors and Their Inventions
- Music: Renaissance (1400-1650): Development of the keyboard instruments as replacements and extensions of the plucked instruments
- Art: When & how Art mediums were discovered and changed ... from early man to the present day.



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Sixth Grade will be exploring the **EXPANSION OF KNOWLEDGE**

Dates of this unit: October – November

Central Idea

Humankind has always been driven to expand their knowledge of the known world

Lines of Inquiry

- Why humans expand
- Historical examples of expansion
- Innovations resulting from expansion
- The benefits and costs of exploration and expansion

Key Concepts

- Change – How is it changing?
- Form – What is it like?
- Function – How does it work?

Subject connections

- Science: Volcanoes create new & fertile land, generate resources, provide beautiful scenery which encourages human, plant and animal expansion
- Social Studies: Early civilizations (Mesopotamia, Babylon, Assyria, Ancient India)
- Language Arts: Short stories include: *The Dog of Pompeii*
- Music: Baroque (1650-1750): Development of valves for brass instruments for woodwinds, the development of the modern bowed family
- Foreign Language: Education influences individual and societies.
- Art: What mediums were used throughout history, how and when.



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Seventh Grade will be inquiring into **SYSTEMS OF CHANGE**.

Dates of this unit: October – November

Central Idea

Knowledge of systems and their components help us understand our world.

Lines of Inquiry

- System components working together
- Interruptions in a system
- Systems-knowledge influences change

Key Concepts

- Change – How is it changing?
- Form – What is it like?
- Function – How does it work?

Subject connections

- Science: Ecology: energy flows through systems, interruptions to systems and impact on them, biospheres influence change
- Social Studies: Early trade in the Middle East
- Language Arts: Short stories include: *To Build a Fire*
- Music: Classical (1750-1820) the invention of the escapement mechanism for the modern piano; further development of wind instruments
- Foreign Language: Trading is indispensable to human societies
- Art: Compare changes/transition in Art styles from Pictographs to canvas.



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Unit of Inquiry: Each class at Valley Prep will be investigating a different aspect of *How the World Works*. Eighth Grade will be exploring **THE PROCESSES OF CHANGE**.

Dates of this unit: October – November

Central Idea

We use processes to investigate questions and solve problems

Lines of Inquiry

- The design process
- Scientific, political, and cultural processes that lead to change

Key Concepts

- Change – How is it changing?
- Form – What is it like?
- Function – How does it work?

Subject connections

- Science: How the design process affects development and efficiency of boats and planes
- Social Studies: The process of writing the Articles of Confederation & Constitution
- Language Arts: Discussion: Changes in political ideology led to militarization in pre-WWII Germany
- Music: Modern: electro-acoustic instruments (electric guitar, bass), fully electronic instruments and synthesis, multitrack recording
- Foreign Language: An inquiry into the "Francophonie" and its challenges and opportunities.
- Art: Compare two different periods in Art and explain the differences.

