

# QUICK VIDEO & Visible Thinking

- VIEW: Short video on concepts
- TEAMS: While viewing, jot down at least 3 different ideas that you find interesting, important, or insightful
- COLOR: Take one idea and what color is it (ready to justify)
- SYMBOL: Take another idea: what symbol represents it (justify)
- IMAGE: Take another idea and sketch a *quick* image (justify)
- TEAM (Split in half?): Share your thoughts one at a time
- WHOLE GROUP SHARE

# TYPES OF LEARNING GOALS

ESSENTIAL QUESTIONS: OPENING DOORS TO STUDENT UNDERSTANDING, WIGGINS & MCTIGHE, P. 173-4, ASCD 2013

- Acquisition: Acquire factual (topical) **knowledge** and basic skills.  
(Our standards)
- Meaning Making: **Engage** the learner in **actively** processing the content they have come to “acquire” *as the **vehicle*** to teach toward **larger concepts (or “big ideas”)**.
- Transfer: Support learners’ ability to **transfer/DO/apply** what they have come to **know** (acquisition) and **understand** (meaning-making) autonomously and effectively in increasingly **new** situations.

ACQUISITION (**KNOW**): TARGET: Teaching to know the factual and topical knowledge (standards)

MEANING MAKING (**UNDERSTAND**): TARGET: Teaching for **CONCEPTUAL UNDERSTANDING**

TRANSFER (**DO**): TARGET: Teaching for transfer/application.

GOAL: Get students to engage in all three types **DAILY**

# TYPES OF LEARNING GOALS

*ESSENTIAL QUESTIONS: OPENING DOORS TO STUDENT UNDERSTANDING, WIGGINS & MCTIGHE, P. 173-4, ASCD 2013*

ACQUISITION (**KNOW**): TARGET: Teaching to know the factual and topical knowledge (**STANDARDS**)

MEANING MAKING (**UNDERSTAND**): TARGET: Teaching for (conceptual) **UNDERSTANDING**

TRANSFER (**DO**): TARGET: Teaching for transfer/application.

## **EXAMPLE:**

ACQUISITION (**KNOW**): Ponce de Leon, Columbus, St. Augustine founded, dates

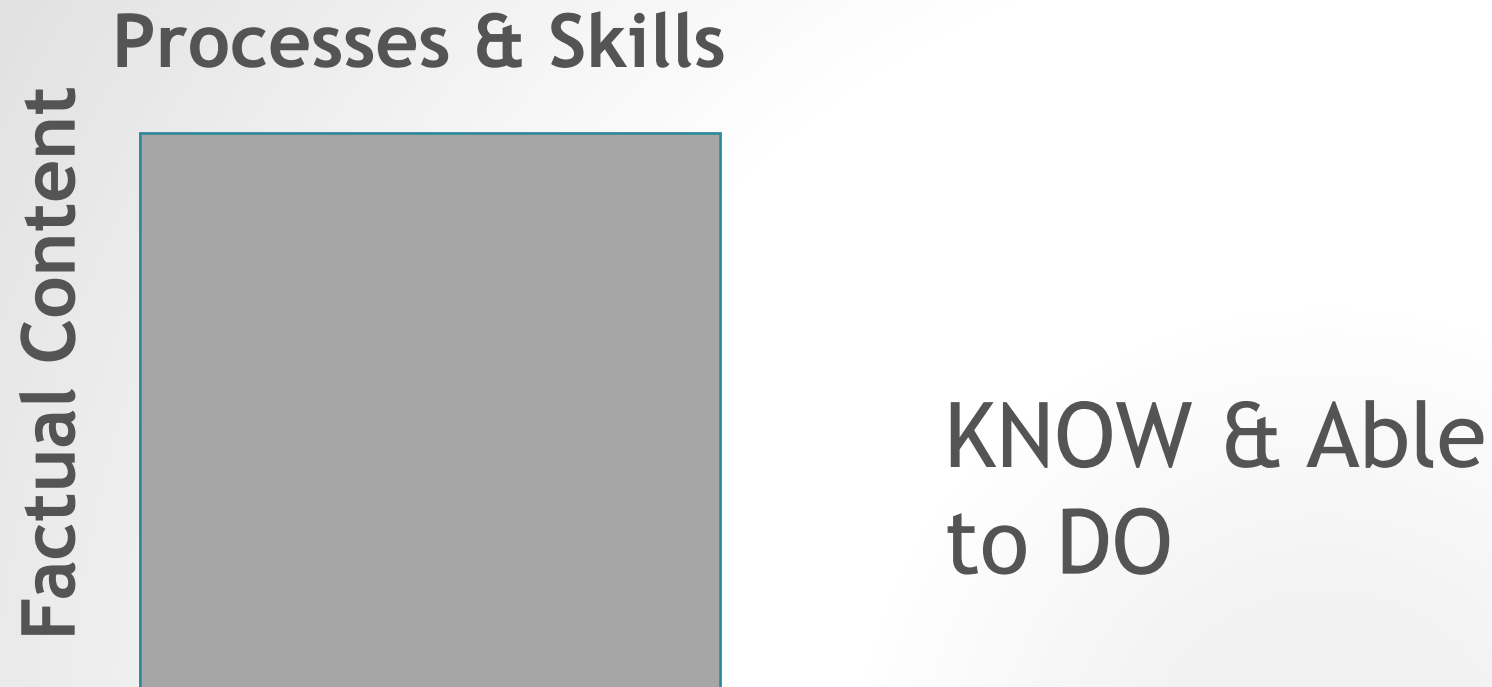
MEANING MAKING (**UNDERSTAND**): (RELATED CONCEPT):  
**Exploration**

TRANSFER (**DO**): Have students share a time they explored something, why they explored it, what they learned. Give a choice as to how they share.

## CONCEPTS & CONNECTIONS TO SOMETHING YOU DO WELL

- Think of something you do very well
- What **KNOWLEDGE** did you/do you need to succeed?
- What **CONCEPT(S)/BIG IDEAS** do you need to understand?
- What **ATL SKILLS** do you use/need?
- What is 1-2 **ATTITUDES** you display when engaged?
- What **ACTION** might you take to improve?
- Be ready to share with a partner.
- Why these 5 “criteria”? (Connection to PYP framework?)

# *Two Dimensional Curriculum Design*



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versus

KNOW, **UNDERSTAND**,  
& Able to DO (THINK:  
KUD)



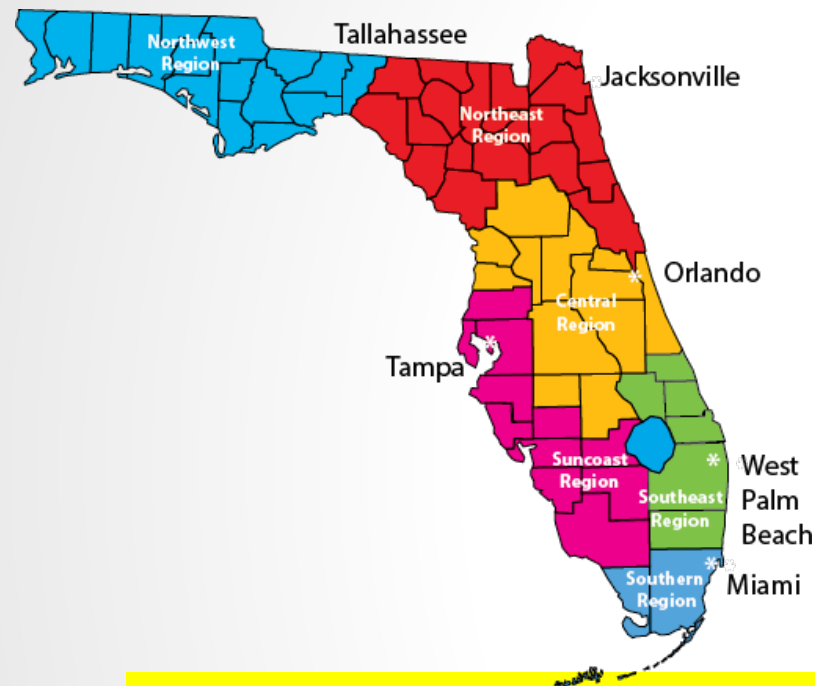
**CONCEPTS &  
Generalizations**

*Three Dimensional Curriculum Design*



Students memorize all of the rivers and all physical features and regions in their state, United States, the World (**2-D**)

OR...



**We use the required content standards to guide students to an “enduring conceptual understanding”(central ideas to us) such as:**

**Geographic features or Location** determine(s) where humans **settle**. (**3-D**)

Students memorize a chronological list of dates, Presidents, leaders, 3 branches of the government of their city, state, or country. **(2-D)**

OR



What are the concepts in the “central idea?”

**OR make it more “open” for trans/interdisciplinary:**

**Systems help to promote structure and order**

**We use the content to guide students to an “enduring conceptual understanding” (statement of inquiry) such as :**

**Governments may help to promote order and responsibility within communities.**

**(3-D)**

Students memorized dinosaur facts, types of dinosaurs, what they ate and completed **worksheets**. They sang songs about dinosaurs in music class, drew pictures of dinosaurs and do math facts with dinosaur counters. (**2-D/KNOW**)



**Concepts in the 3-D central idea/**

**OR... "Open it up":**  
**Adaptations help us meet needs in different environments.**

OR

**Use the content to guide students to an “enduring conceptual understanding of the statement of inquiry:**

**Living things adapt to changing ecosystems.**

**(3-D/UNDERSTAND)**



# Two-dimensional versus Three-dimensional

## Coverage-Centered

“inch deep, mile wide”

**Intellectually shallow**  
lacks a conceptual focus  
to create a factual-  
conceptual brain synergy

## Idea-Centered

Facts provide **acquisition**/foundation  
(**KNOW**) to **make meaning** of concepts  
(**UNDERSTAND**) which leads to **transfer**  
of concepts/skills across disciplines  
(**DO**)

## Intellectual Depth

A conceptual lens or focus requires  
mental processing of the factual and  
conceptual levels **producing**  
**intellectual depth in thinking and**  
**understanding**

# Two-dimensional versus Three-dimensional

## Inability to transfer

Facts/topics are locked/frozen in time, place, or situation

## Intellectual Demands

FAILS to meet the intellectual demands of the 21st century

## Concepts/Generalizations Transfer

Allows the brain to **make connections** and **see patterns**. This leads to cognitive flexibility

## Intellectual Demands

Develops the intellect necessary to handle a world of increasing complexity and accelerating change

*Think of*

ASK: “What MUST the students **know**, **understand**, and be able to **do**?” when planning a unit of study! (**KUD**)

## **KNOW (2-D)**

Factual & Topical Content (**acquisition**) which is locked (frozen) in time, place or situation. This is the “**KNOWLEDGE** (from our standards”)

## **UNDERSTAND (3-D)**

**DO =  
SKILLS/ATL  
& TRANSFER**

**CONCEPTS** which transfer through time, across cultures + disciplines, and across situations via generalization statements aka central ideas (**making meaning & transfer**)

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# "KUD" example

## Grade 2 Science (SC.P.13.1 thru 13.4)

<b>KNOW</b> <b>2-D</b>	<b>UNDERSTAND</b> <b>3-D</b>	<b>DO</b> <b>TRANSFER</b>
<p>*Investigate the effect of applying Investigate the effect of applying various pushes and pulls on different objects</p> <p>*Demonstrate that magnets can be used to make some things move without touching them</p> <p>*Recognize that objects are pulled toward the ground unless something holds them up</p> <p>*Demonstrate that the greater the force (push or pull) applied to an object, the greater the change in motion of the object</p> <p><b>What are some CONCEPTS?</b></p>	<p><b><u>CONCEPTS:</u></b>  <b>movement/motion, force, change</b></p> <p><b><u>CENTRAL IDEA:</u></b>  <b>Different forces can change the position of an object (OR more “open”...Forces can change position)</b></p>	<p><b><u>SKILLS FROM STANDARDS:</u></b></p> <ul style="list-style-type: none"> <li>*Raise questions about the natural world</li> <li>*Compare observations made by different groups using same tools</li> <li>*Distinguish between observation and inference</li> </ul> <p><b><u>APPROACHES TO LEARNING:</u></b>  <b>QUICK TABLE TALK:</b>  <b>Discuss some Approaches to Learning (ATL) you could foresee students using and developing and</b></p>



# KEY CONCEPTS & LINES OF INQUIRY

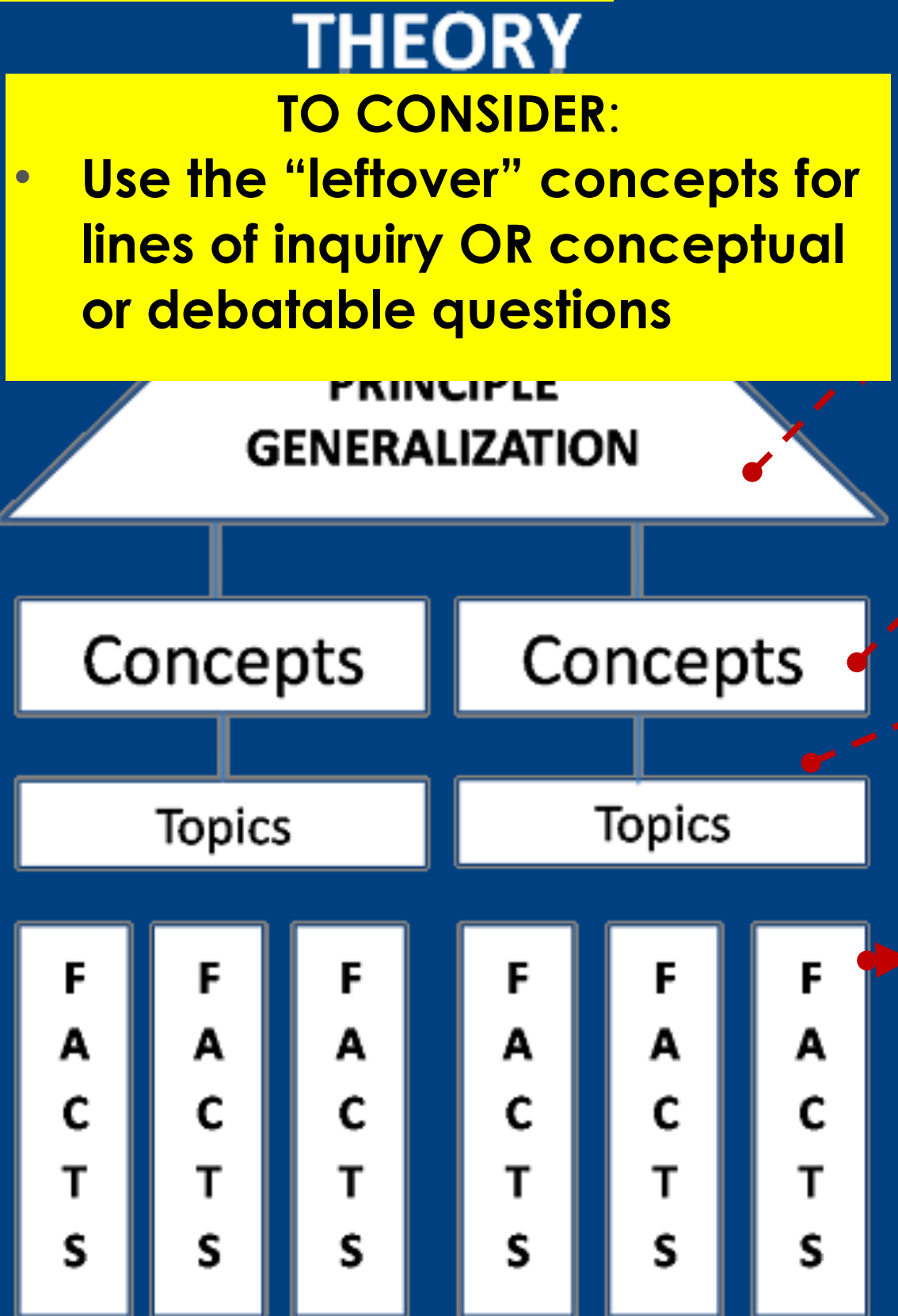
Example Central Idea 1: Challenges and opportunities may lead to migration

- The **role** of migration (**function**)
- Migration **patterns** through history (?)
- **Impacts** of migration (?)

Example Central Idea 2: Celebrations and traditions express the beliefs and values of a culture.

- **Structure** of cultures (?)
- **Similarities and differences** in celebrations and traditions (?)
- The **relationship** between beliefs/values and celebrations/traditions (?)

# The Structure of Knowledge



Generalization (aka enduring understanding/central idea):

Migration and exploration may lead to opportunities or challenges. (3-D)

STATED: Migration Opportunity Exploration  
Technology Challenges Transportation

IMPLIED: Needs Conflict Freedom Beliefs

Westward Expansion in The Americas.

The Forty-Niners and other early European Settlers travelled west to seek opportunity.

Clashes with indigenous peoples

Ponce de Leon, Lewis & Clark, Columbus, and other settlers looked for new opportunities.

Describe the hardships/ challenges of settlers along routes to the West.

# The Structure of Knowledge

Generalization (End Understanding/CENTRAL IDEA)

Goods and services are based on needs and wants.

People make choices based on available resources.

(3-D)

STATED: resources Goods/services Barter  
Producers/consumers Economy Choices

Scarcity

IMPLIED: Market System Interdependence.

Needs/wants

SS (Economy of \_\_\_\_\_)

1: The three main types of resources are natural, human, capital

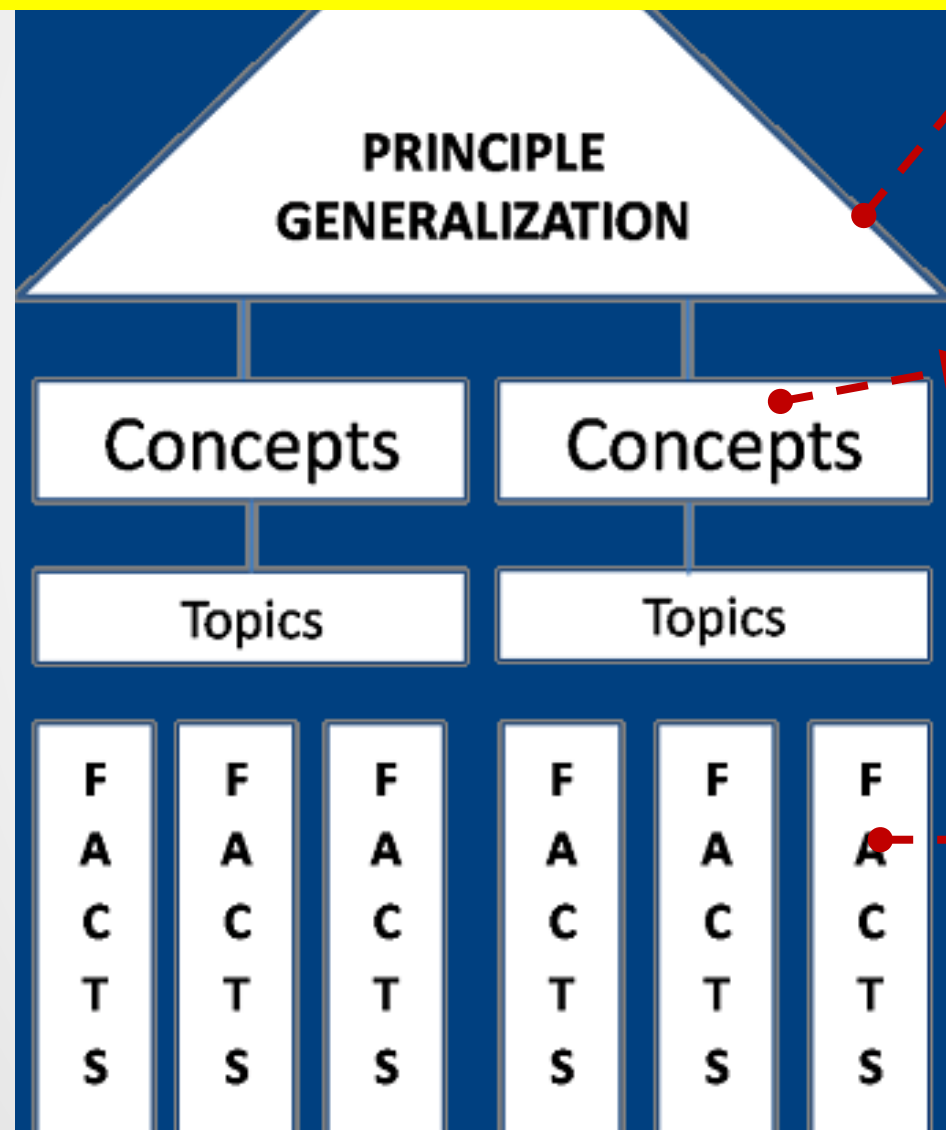
2: People acquire goods/services through barter, exchange of money.

3: People are both producers and consumers.

4: People must make economic choices b/c resources are limited (scarcity).

## TO CONSIDER:

- Use the “leftover” concepts for lines of inquiry OR conceptual or debatable questions



# The Structure of Knowledge

Generalization (End Understanding/CENTRAL IDEA)

Structures and adaptations lead to survival.

Adaptations and interdependence in different environments help us meet needs. (3-D)

## TO CONSIDER:

- Use the “leftover” concepts for lines of inquiry OR conceptual or debatable questions

STATED: function Reproduction Process  
Photosynthesis. Adaptation. Needs. Communities. Habitat.  
Ecosystems. Organism. Interact. (Life) Cycle

IMPLIED: Structure. System. Interdependence.  
Environment. Survival

Science: Life+Living Systems of \_\_\_\_\_

1 Identify parts of plant and their functions

Create a diagram-parts of a flower-reproductive process

Explain photosynthesis

Explain role of adaptations (of plants and animals)

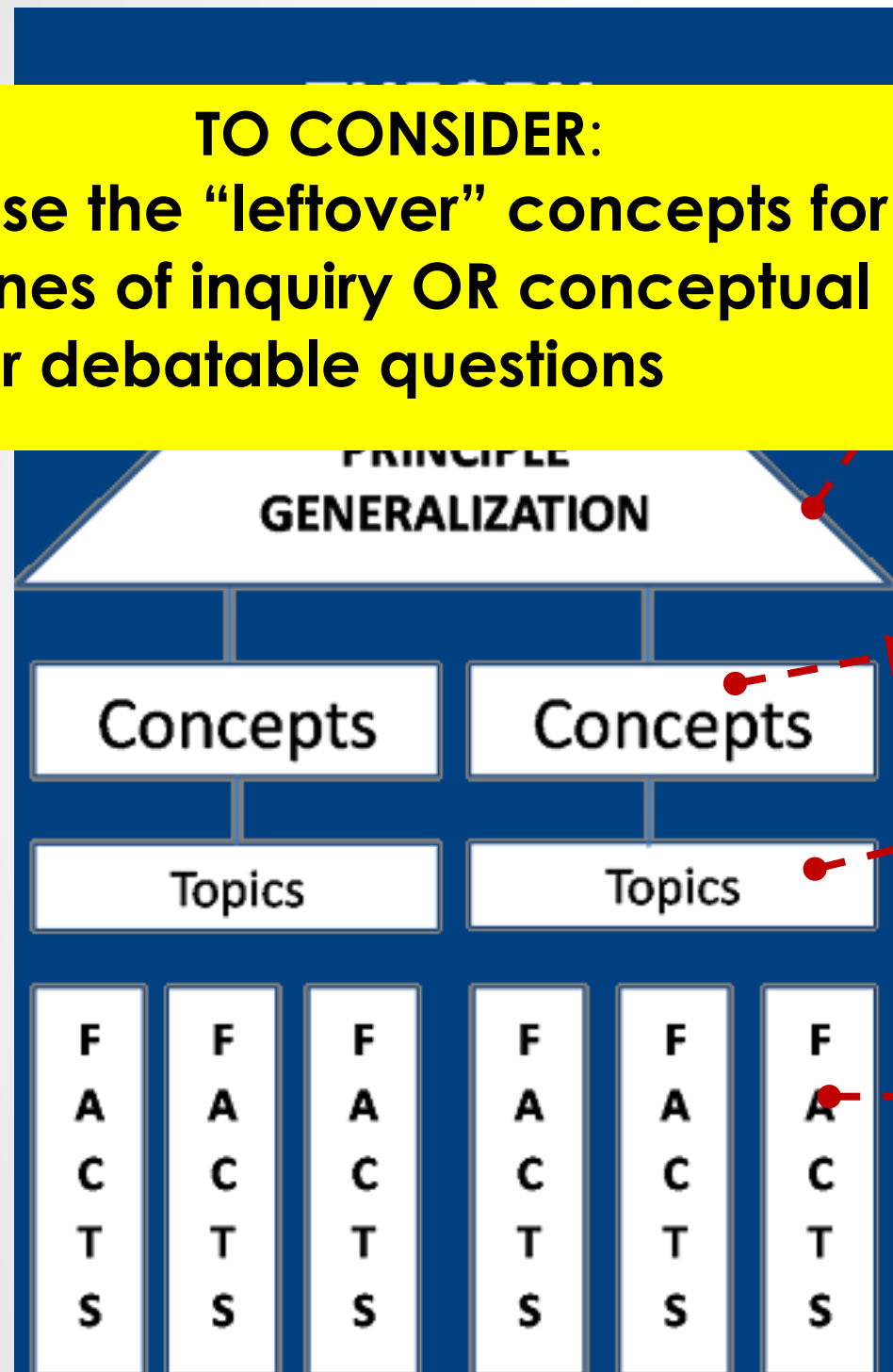
2: Diff organisms use adaptations to meet needs.

Describe why certain communities exist in given habitats.

Illustrate a food web.

Human influences on ecosystems.

Compare/contrast diff ways organisms interact at diff stages of the life cycle.





# The Structure of Knowledge

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## THEORY

### TO CONSIDER:

- Use the “leftover” concepts for lines of inquiry OR conceptual or debatable questions

Generalization (aka "CENTRAL IDEA"):

(By thinking “the student will understand that”, it will force a statement):

**(Natural) processes and forces results in changes (on Earth).**  
**(3-D/UNDERSTAND)**

STATED: change landforms force movement

IMPLIED: natural processes catastrophe Disaster

Earth & Space Science (ESS)

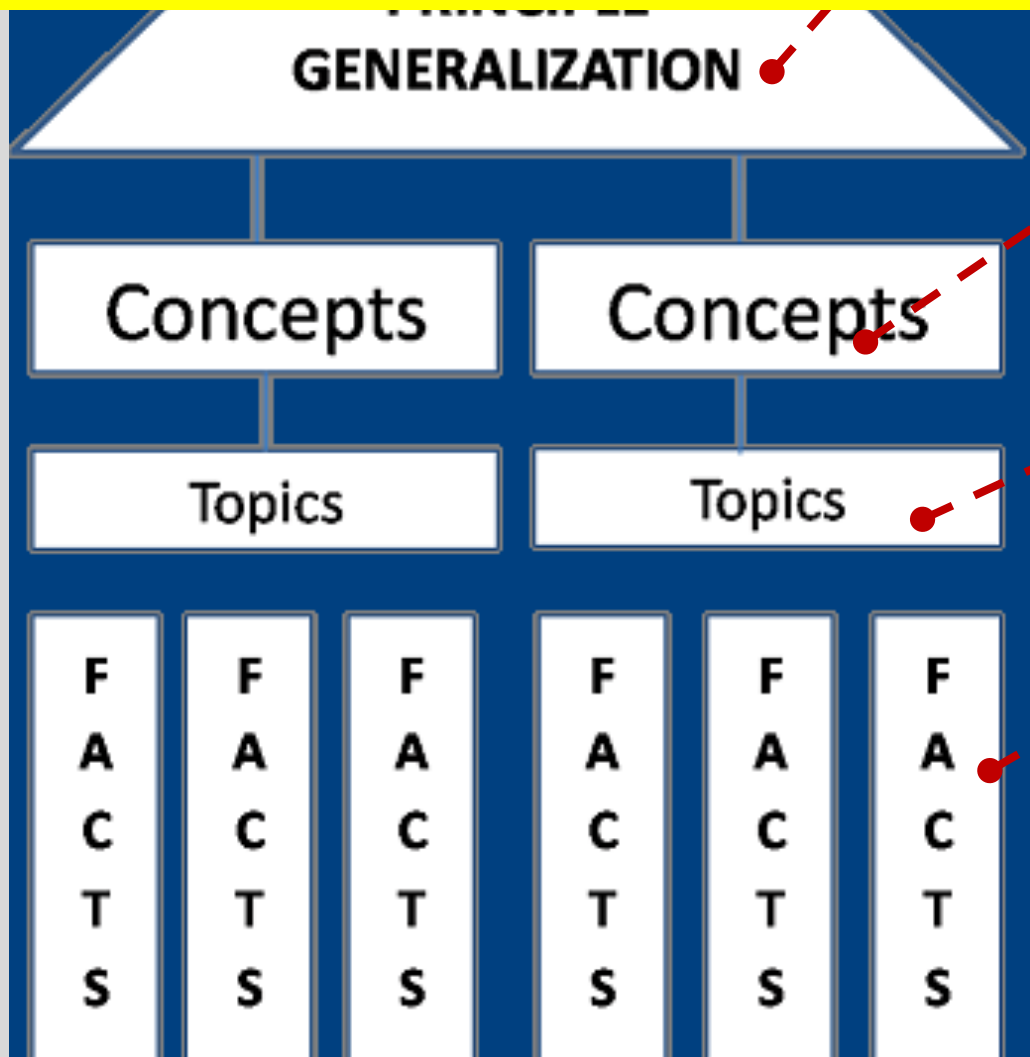
Earth’s surface has specific characteristics and landforms that can be identified.

The surface of Earth changes due to weathering, erosion, and deposition.

Flooding, volcanoes, earthquakes can create landforms

Rocks change shape (due to events)

Gravitational force affects movement of water, rock, and soil.



# The Structure of Knowledge

Generalization/CENTRAL IDEA

**Environmental factors** influence the **adaptations** of **living things**. (3-D)

- Now let's view another short clip from **Mona Lisa's Smile**
- Be ready to share out some thoughts

**Related Concepts**

STATED: **climate living things**

IMPLIED: **environment adaptations resources**

**Amazon rainforest**

Students typically LOVE to learn about the rainforest

FOR ME: Learning ended here (filled their heads)

CONSIDER: What are some "big ideas" or concepts are behind these topics + facts? (PG 97-98 MTPYPH DOC)

Hot and wet climate

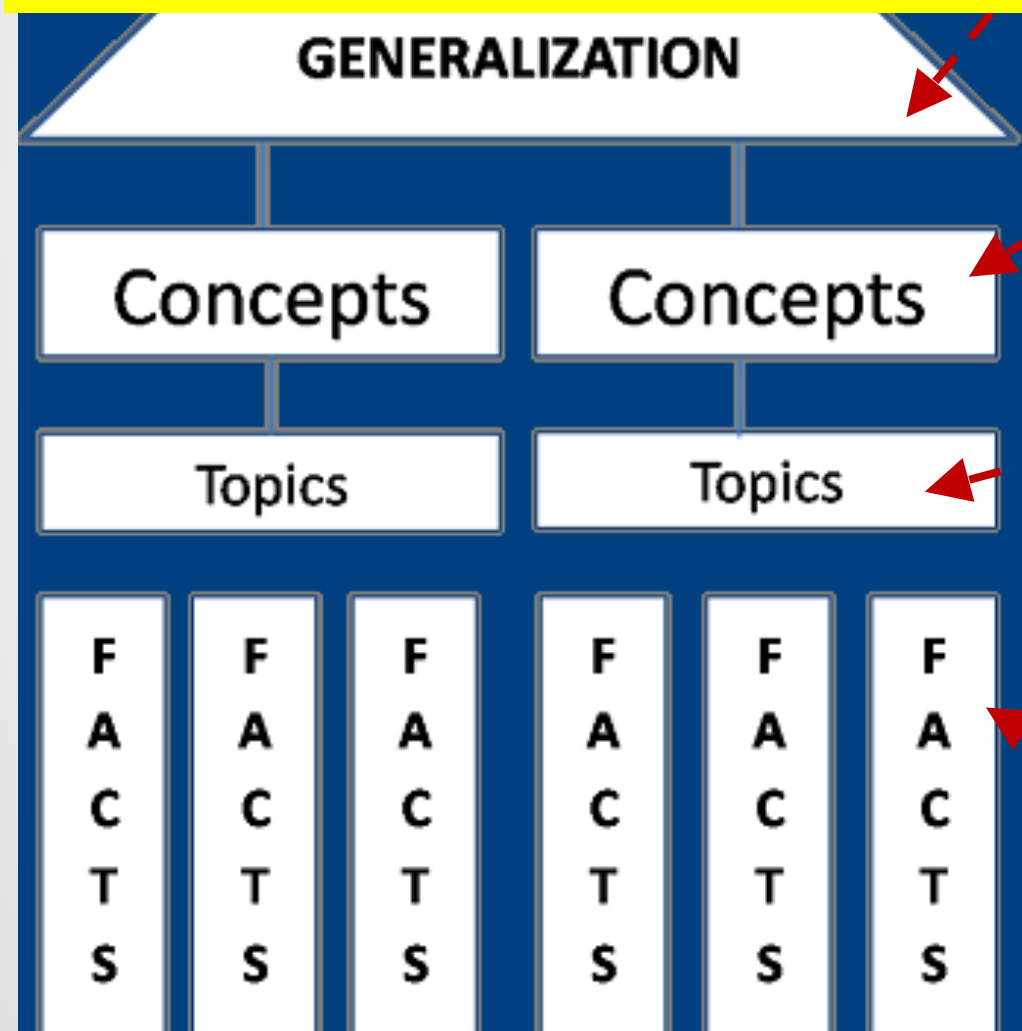
Layers of the canopy

There are countless species of living things

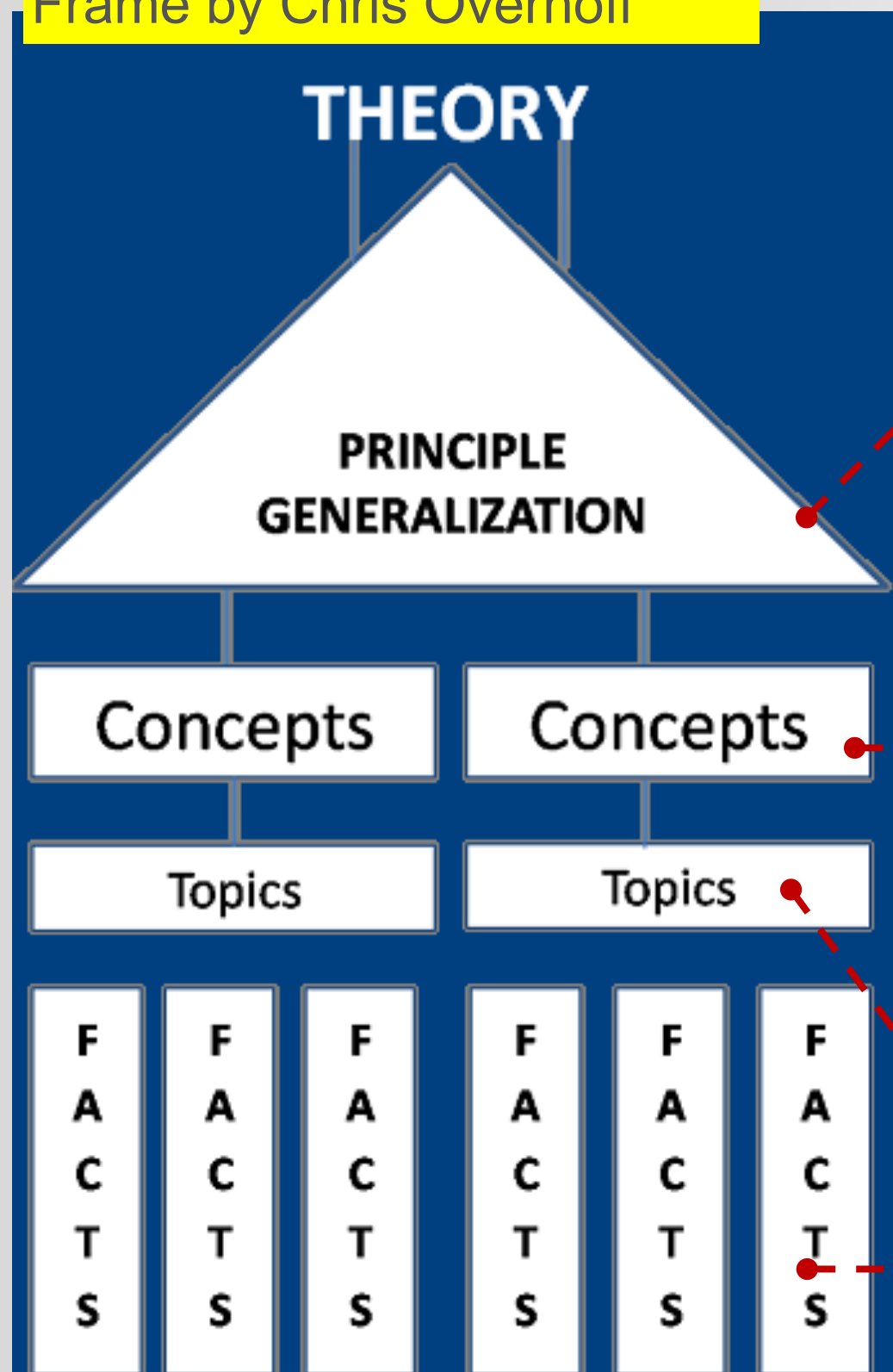
Deforestation is taking place

## PLEASE WATCH FOR:

- What is learning goal?
- What is topic?
- Concepts?
- What might you expect in terms of assessment?



# *The Structure of Knowledge*



**TRANSFER**

**DO**

Generalizations: 2 or more concepts stated in a relationship.  
(**THINK: CVC**)

PYP: Central Idea Statements

**MEANING  
MAKING**

**UNDERSTAND**

Concepts are the “big ideas” that are generally **timeless**, **abstract** (to a degree), **universal**, **transferable**, (“**TAUT**”) and are usually 1 or 2 words

**ACQUISITION**

**KNOW**

Facts and Topics are locked into time, place, and situation.

# Examples of Concepts Across Disciplines

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Science	Social Studies	Concepts in Text	Writer's Craft	Reader's Craft
Matter Magnetism Population <b>System</b> <b>Pattern</b> Change Evolution Cycle Interaction Energy Habitats Ecosystem Interdependence <b>Relationships</b>	Conflict/Cooperation <b>Relationships</b> <b>Patterns</b> Scarcity <b>System</b> Change/Continuity Culture Supply/Demand Civilization Migration/Immigration Interdependence	Prejudice Perspective Conflict Cooperation Power <b>Relationships</b> <b>System</b> Envy Emotions Oppression <b>Patterns</b> Influence	Organization Word Choice <b>Pattern</b> Context Conventions Fluency Voice Presentation Symbolism Allegory Metaphor Protagonist Antagonist <b>Relationships</b>	Inference <b>Pattern</b> Context Clues Meaning Paraphrase Summary Text Structure/ <b>Relationships</b> Reading Rate Directionality Imagery Genre

The larger **macro-concepts** allow for more opportunities for connections across disciplines



**MACRO CONCEPTS**  
give us *breadth* &  
greater *transferability*



**MICRO CONCEPTS** are  
*discipline- specific*  
and give us *depth*



# NEXT GENERATION SCIENCE STANDARDS GR 3: PRACTICE

## PS2.A:

- Each force acts on one particular object and has both strength and direction
- Forces can cause changes in an object's speed or direction of motion
- Patterns of an object's motion can be observed; future motion predicted

## PS2.B:

- Object's in contact exert forces on each other
- Electric and magnetic interactions between objects do not require that the objects be in contact.

- TEAMS: Identify concepts that are explicitly stated or implied
- Share out...I scribe
- Craft a “central idea” using at least 2 concepts (C-V-C): Record on chart
- Also record the trans theme
- Lines of inquiry using “leftover” concepts as time permits

# GRASPs & Summatives

- **Goal:** What is the “enduring understanding” that you seek for your students? (Central Idea)
- **Role:** What is the role that students will take?
- **Audience:** Who is the desired reader/viewer/listener for the work?
- **Situation:** What is the situation/scenario in which the communicator and the audience are working.
- **Performance or Product:** What will students create or what will they do to apply knowledge gained in a NEW situation?
- **Standards:** What are the criteria for success? (Try to involve students when developing criteria. There should be no “surprises”).

# Example Summative

**Central Idea:** Challenges and opportunities may lead to migration.

**Lines of Inquiry:**

- Reasons people migrate (**function**)
- Migration **patterns** through history (**function**)
- **Impact** of migration on communities, cultures, and individuals (**causation**)

**Summative Assessment:** You are the leader of a group of people. As the leader, it is your job to persuade them to migrate to a new area. You will need to **explain**:

- At least 2 challenges in your current location
- The area you will migrate to
- At least 2 reasons you should all migrate there
- At least 3 opportunities that will be available that are not currently available where you live now
- You may choose how to persuade them (newscast, power point, iMovie, etc.)
- **TEAM:** Identify what content students need to **KNOW**, what **concepts (key & related)** they need to **UNDERSTAND**, **SKILLS** they will need to use, 2 **ATTITUDES** that they will need to show, and a possible **ACTION**



# Example Summative

**Central Idea:** Roles and responsibilities help a community function.

**Lines of Inquiry:**

- The **structure** of communities (**form**)
- **Similarities and differences** of communities ( **form**)
- **Impact** of roles and responsibilities on communities (**causation**)

**Summative Assessment:** You are a community planner. The board members of your community will be holding a community meeting open to the public. They would like to hear about roles and responsibilities in different communities. Your task is to choose a community you are a part of (home, club, church, etc.). Describe at least one role and one responsibility you have that helps your community function. You must also describe what might happen to the community if you did not perform your role or responsibility.

**You may choose how to share your information (PowerPoint, poster, SeeSaw, keynote)**