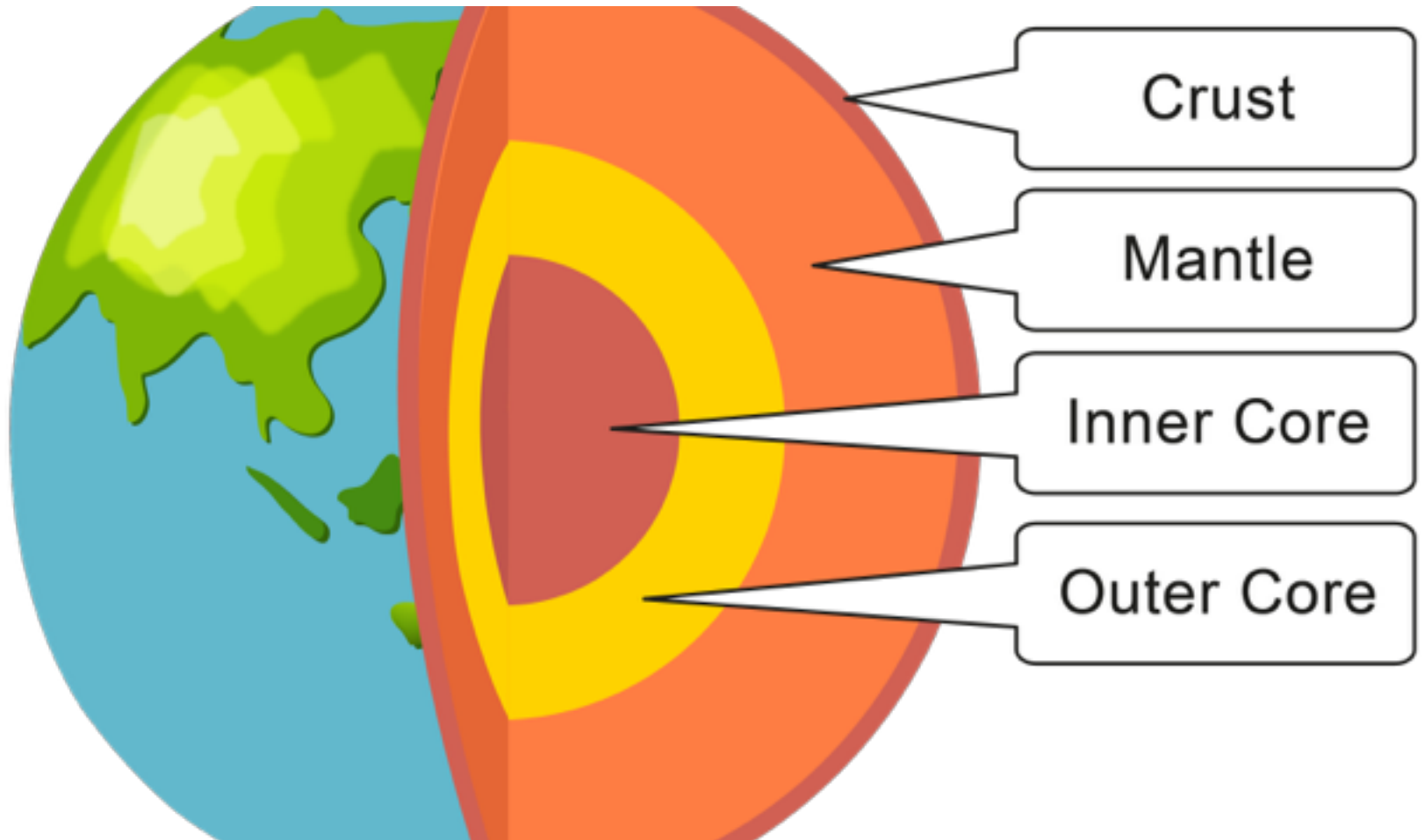


Layers of Earth

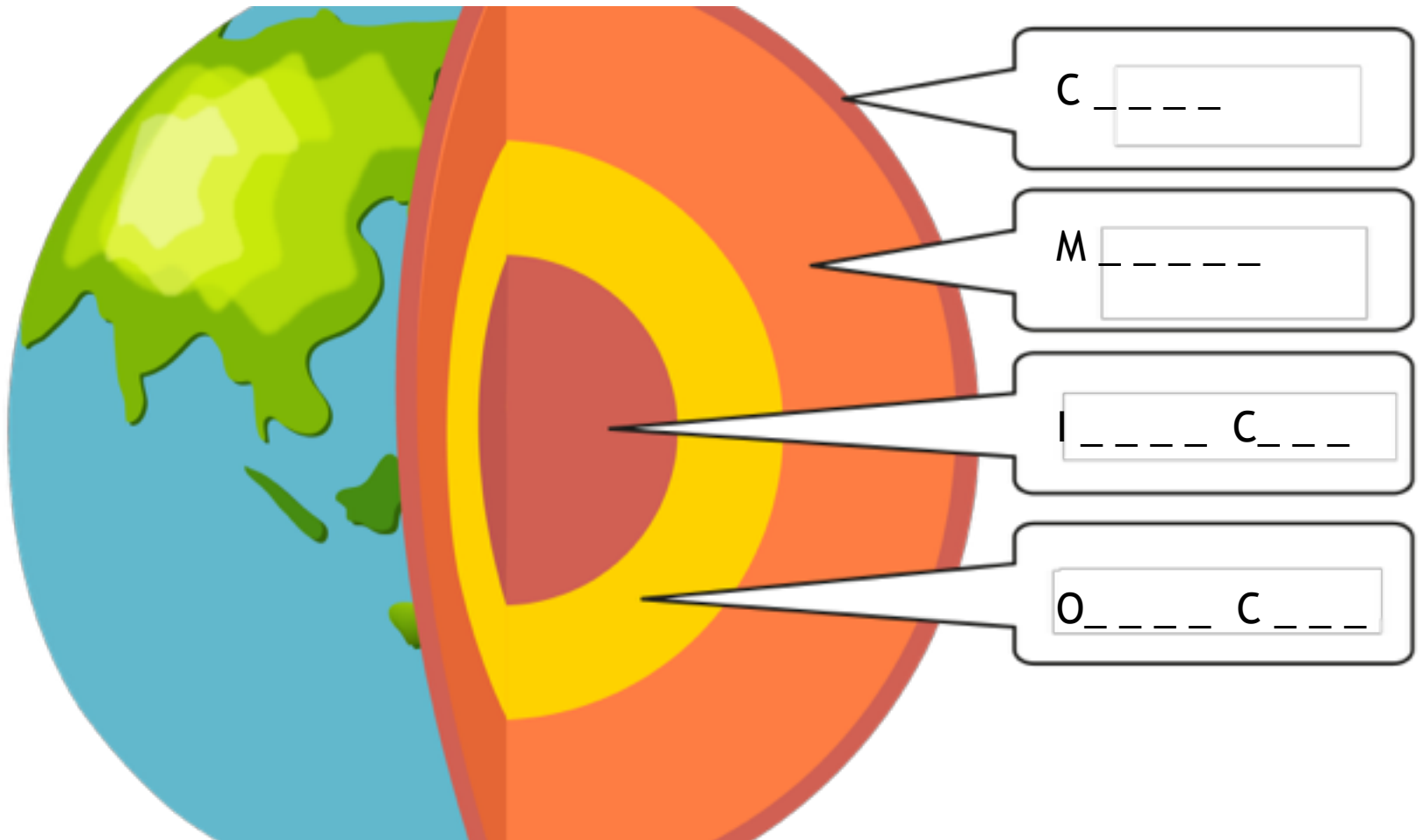


What are the layers of the Earth?

Layers of the Earth



Do you remember the layers?



Match the words to the definitions

LAYERS	OUTSIDE CENTRE
<i>CRUST</i>	<i>COVER</i>
MANTLE	STRATA
<i>INNER CORE</i>	<i>OUTSIDE LAYER</i>
OUTER CORE	CENTRE

FIND THE PRONUNCIATION

LAYERS	mæntəl
<i>CRUST</i>	<i>leərz</i>
MANTLE	ɪnər kɔr
<i>INNER CORE</i>	<i>awtər kɔr</i>
OUTER CORE	krəst

Match the words to their translation

- Layers
- Crust
- Mantle
- Inner Core
- Outer Core

Nucleo interno
Mantello
Crosta
Nucleo esterno
Strati

mantle	mæntəl	covering	mantello
<i>crust</i>	<i>krʌst</i>	<i>Outer layer</i>	<i>crosta</i>
solid	'sɒlɪd	hard	solido
<i>liquid</i>	<i>'lɪkwɪd</i>	<i>fluid</i>	<i>liquido</i>
nickel	'nɪkl	Silvery metal	Nickel/nichel
<i>iron</i>	<i>'aɪən</i>	<i>metal</i>	<i>ferro</i>
Molten form	'mɒltən fɔ:m	Made liquid by heat	fuso
<i>lava</i>	<i>'lɑ:və</i>	<i>Molten/melted rock</i>	<i>lava</i>
Landform	lændfɔ:m	Geographical features	morfologia
<i>inner</i>	<i>'ɪnə</i>	<i>Inside part</i>	<i>interno</i>

Cut out and match the pronunciation

water	krʌst	liquid	mæntəl
<i>volcanoes</i>	<i>'sɒlɪd</i>	<i>nickel</i>	<i>'wɔ:tə</i>
<i>rock</i>	<i>'lɪkwɪd</i>	<i>iron</i>	<i>'aʊtə</i>
<i>outer</i>	<i>'laɪvə</i>	<i>molten form</i>	<i>vɒl'keɪnəʊz</i>
<i>mantle</i>	<i>rɒk</i>	<i>lava</i>	<i>lændfɔ:m</i>
<i>crust</i>	<i>'nɪkl</i>	<i>landform</i>	<i>'ɪnə</i>
<i>solid</i>	<i>'aɪən</i>	<i>inner</i>	<i>'mæʊltən fɔ:m</i>

Videos of Layers of the Earth

- https://www.youtube.com/watch?v=24w01G_7fyc&https://www.youtube.com/watch?v=24w01G_7fyc&t=337s=337s

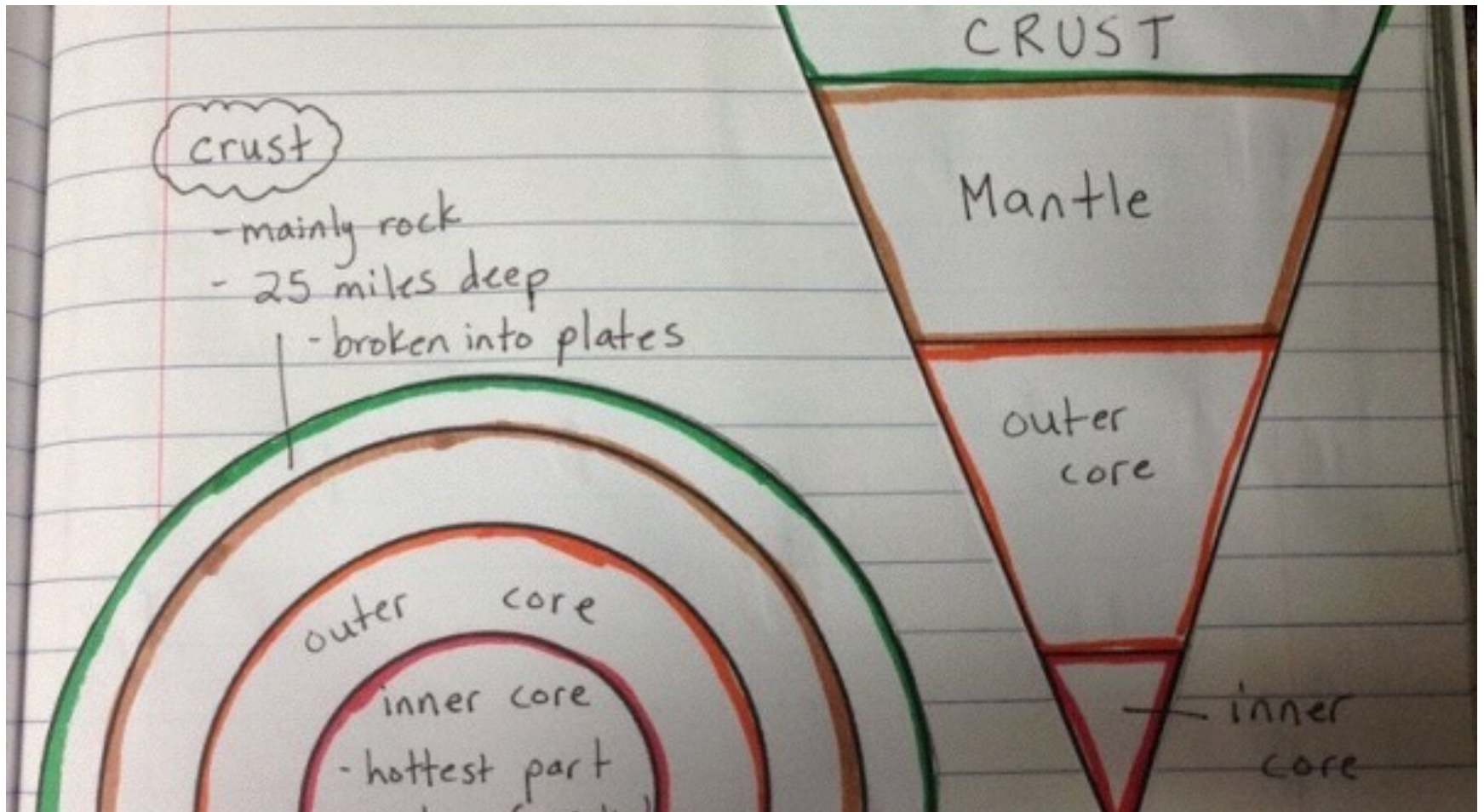
The Layers

The outer cool layer on which we live is called **CRUST**.

Earth's crust is covered with **landforms** air and water.

Mantle is the layer below the crust. Mantle is very hot. Mantle consists of rocks in **molten form**. The core is located just below the mantle. **Core** is divided into two parts, the **Outer core** and the **Inner core**. The outer core is in **liquid state**. The inner core is in solid state. In the inner core the metals **nickel** and **iron** are in **solid state**. In the outer core the metals nickel and Iron are in molten form. Sometimes, hot melted rock called **lava** comes out to the surface of the earth. Such places are called **volcanoes**.

How to illustrate



True or false

- 1. The Earth has 4 main layers T
F
- 2. The Inner core is liquid and hot T
F
- 3. In the outer core the metals are molten T F
- 4. The mantle is below the core T
F
- 5. The Earth's crust has only landforms T F

Fill in the blanks using the following words:

(volcanoes, nickel, water, rock, outer, mantle, crust, liquid, solid, iron, molten form, lava, landforms, inner)

The outer cool layer on which we live is called c_____.
Earth's crust is covered with l_____ air and w_____.
M_____ is the layer below the crust. Mantle is very hot. Mantle consists of r_____ in molten form. The core is located just below the mantle. Core is divided into two parts, the o_____ core and the i_____ core. The outer core is in l_____ state. The inner core is in s_____ state. In the inner core the metals n_____ and iron are in solid state. In the outer core the metals nickel and l_____ are in m_____ form. Sometimes, hot melted rock called l_____ comes out to the surface of the earth. Such places are called v_____.

THE LAYERS (PRIMARY)

- The outer cool layer is called **CRUST**.
- Earth's crust is covered with landforms, air and water.
- **Mantle** is the layer below the crust.
- The Mantle is very hot.
- Mantle consists of rocks in liquid form.
- The core is below the mantle.
- **Core** is divided into two parts, the **Outer core** and the **Inner core** .
- The outer core is in liquid state. The inner core is in solid state.
- In the inner core metals **nickel** and **iron** are **solid**.
- In the outer core the metals nickel and Iron are **liquid**.
- **Lava** comes out to the surface of the earth. Such places are called **volcanoes**.

Questions

- 1. What is a crust?
.....
- 2. What is the Earth's crust covered with?
.....
- 3. What is below the crust?
.....
- 4. What is the mantle?
.....
- 5. What is below the mantle?
.....
- 6. How many parts does the core have?
.....
- 7. Which core is solid and which is liquid?
.....
- 8. Where are nickel and iron solid and liquid?
.....
- 9. What is lava?
.....
- 10. Where does lava come out of?
.....

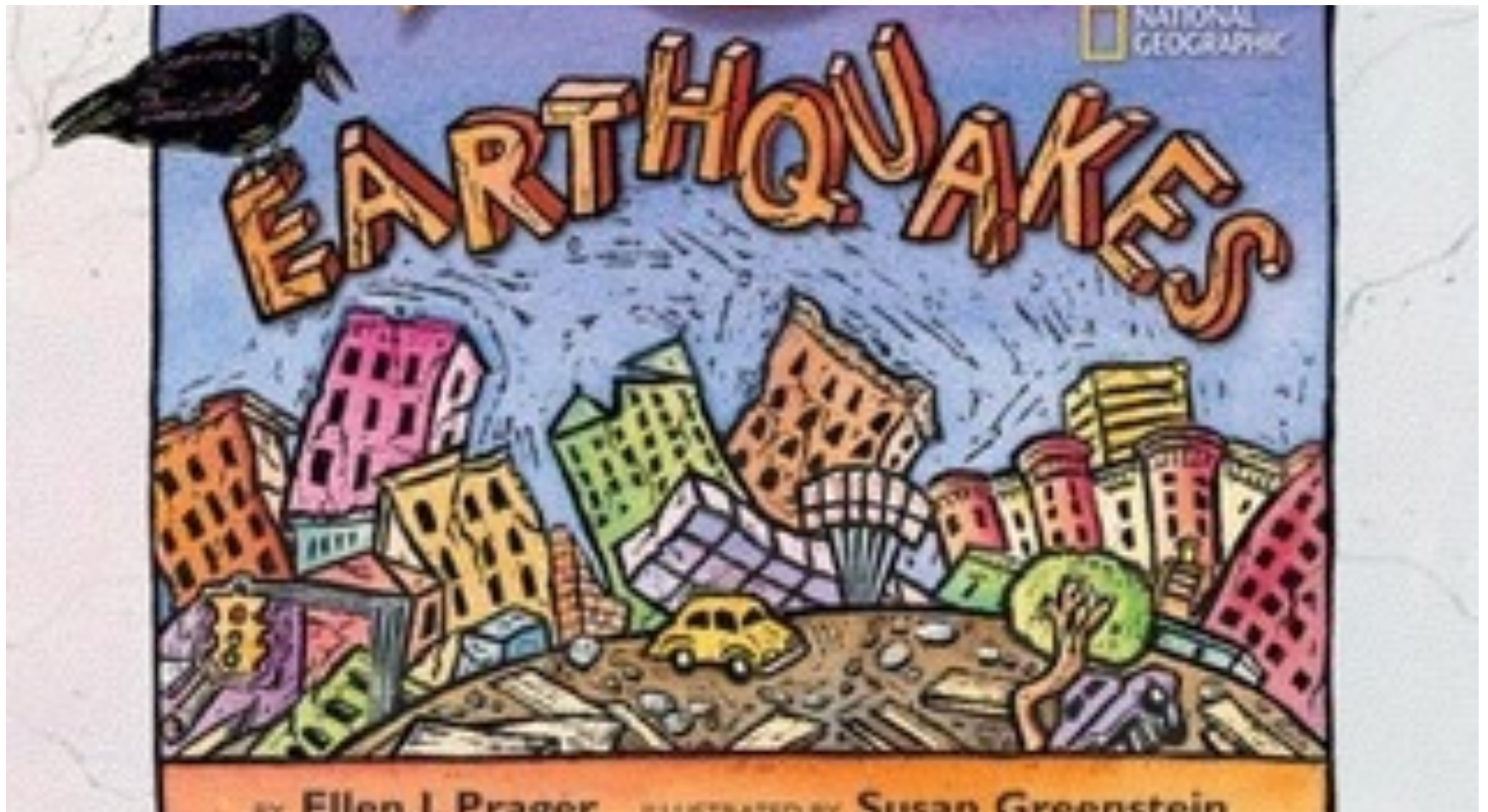
How to create

<http://www.navigatingbyjoy.com/2013/04/13/clay-model-of-the-earths-layers>

How to Make a Clay Earth



Picture description



What's an Earthquake?

<https://www.youtube.com/watch?v=dJplU1rSOFY>

- The surface of the earth is like a jigsaw puzzle it's not a single piece of land
- But approximately 20 pieces of a puzzle that constantly move, but you don't feel it because they move quite slowly. Each one of those puzzle pieces are called **TECTONIC PLATES** so whenever those plates hit or slide past another plate an earthquake is caused. The surface where these plates slip is called **FAULT** or the **FAULT PLANE**.

So when do you think it happens?

- Well, it happens all the time. But hey don't be scared. Most of the times we don't feel the **QUAKES**. They are too small to reach us. But sometimes they are so strong that they can be felt over a thousand miles away. The place where the earthquake originates is called the **HYPOCENTRE** and the place where it occurs on the surface is **EPICENTRE**.

- There are three types of earthquakes:
 - **1.CONVERGENT BOUNDARY**, here one plate is forced over another during an earthquake which causes a **2.THRUST FAULT**. Many hills and mountains have been formed due to the convergent boundary.
 - **3.DIVERGENT BOUNDARY**, here plates are drifted apart from each other forming a **RIFT ZONE**. This kind gives birth to new ocean flows.
 - **TRANSFORM FAULT** here the plates slip by each other and this is also called **STRIKE SLIP**.

- So earthquakes are nothing but the shaking, rolling or sudden shock of the earth's surface.
- The instrument used by scientists to measure the intensity of earthquake is known as a **SEISMOGRAPH**. A **TSUNAMI** is caused when earthquakes occur under water

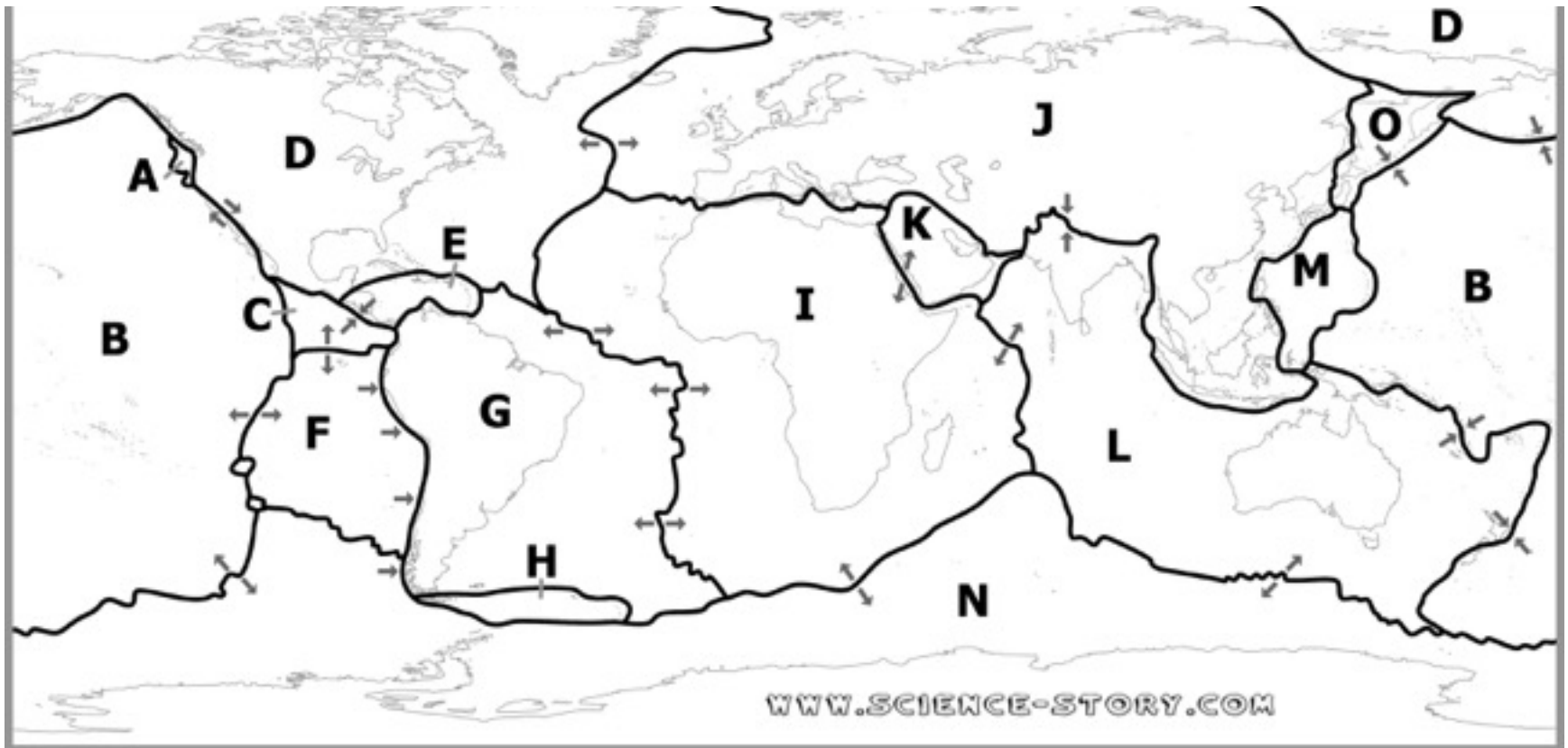
Word search: Earthquake search for the words below.

TECTONIC PLATES	LARGE THIN PLATES ON THE OUTER SURFACE OF THE EARTH
<i>FAULT PLANE</i>	<i>CRACK / BREAK</i>
<i>QUAKES</i>	<i>SHAKES</i>
<i>HYPOCENTRE</i>	<i>PLACE THE QUAKE ORIGINATES</i>
<i>EPICENTRE</i>	<i>POINT ABOVE TRUE CENTRE</i>
<i>CONVERGENT BOUNDARY</i>	<i>ONE PLATE FORCED OVER ANOTHER</i>
<i>THRUST FAULT</i>	<i>RESULT OF A CONVERGENT</i>
<i>DIVERGENT BOUNDARY</i>	<i>PLATES ARE FORCED APART FROM EACH OTHER</i>
<i>TRANSFORM FAULT</i>	<i>PLATES SLIP BY EACH OTHER,</i>
<i>STRIKE SLIP</i>	<i>ANOTHER WORD FOR TRANSFORM</i>
<i>SEISMOGRAPH</i>	<i>MEASURES AND RECORDS SEISMIC WAVES</i>
<i>MAGNITUDE</i>	<i>A NUMBER TO QUANTIFY THE SIZE OF AN EARTHQUAKE</i>
<i>TSUNAMI</i>	<i>A SEISMIC SEA WAVE</i>
<i>SURFACE</i>	<i>COVER</i>
<i>RICHTER SCALE</i>	<i>QUANTIFIES THE SIZE OF AN EARTHQUAKE</i>

Match the pronunciation

TECTONIC PLATES		rɪktər skel	
FAULT PLANE	'ɛpɪsɛntə	TRANSFORM FAULT	straɪk sli:p
QUAKES	kən'vɜ:ɔ:dʒənt 'baʊndəri	STRIKE SLIP	'saɪzməgrɑ:f
HYPOCENTRE	kweɪks	SEISMOGRAPH	tɛk'tɒnɪk pleɪts
EPICENTRE	mægnɪtju:d	MAGNITUDE	'sɜ:fɪs
CONVERGENT BOUNDARY	fɔ:lt pleɪn	TSUNAMI	θrʌst fɔ:lt
THRUST FAULT	hepɒsɛntə	SURFACE	træns'fɔ:m fɔ:lt
DIVERGENT BOUNDARY	tsu:ˈnɑ:mɪ	RICHTER SCALE	daɪ'vɜ:ɔ:dʒənt 'baʊndəri

Map of Tectonic Plates



Major Plates

- I) African Plate
- N) Antarctic Plate
- J) Eurasian Plate
- B) Pacific Plate
- L) Indo-Australian Plate
- D) North American Plate
- G) South American Plate

Minor Plates

- K) Arabian Plate
- E) Caribbean Plate
- C) Cocos Plate
- F) Nazca Plate
- A) Juan de Fuca Plate
- M) Philippine Sea Plate
- H) Scotia Plate
- O) Okhotsk Plate

Name: _____

Class: _____

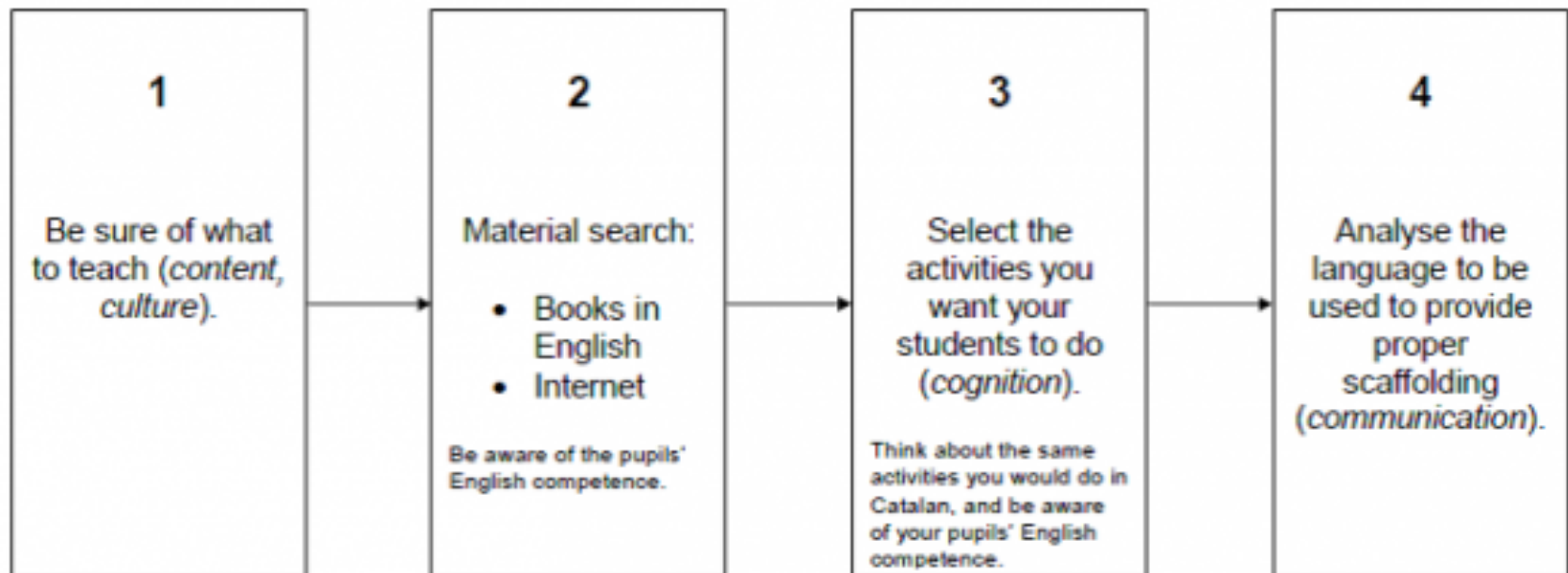
Useful sites for Earthquakes

- Layers of the Earth
- https://www.youtube.com/watch?v=24w01G_7fyc

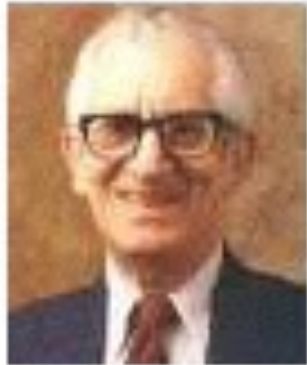
- Video Tutorials of Earthquake
- <https://www.youtube.com/watch?v=dJpIU1rSOFY>
- <http://www.3dgeography.co.uk/earthquakes>
Worksheets on Earthquakes
- <https://www.thoughtco.com/free-earthquake-printables-1832385>
- <http://busyteacher.org/search.html?q=earthquakes>
- <http://www.brighthubeducation.com/science-homework-help/53594-earthquake-vocabulary-words/>
- <http://easyscienceforkids.com/all-about-earthquakes/>
Photos of earthquakes in Italy
- <http://www.boredpanda.com/italy-earthquake-before-after/>
- Create Models

Where to start?

CREATION PROCESS OF A CLIL LESSON



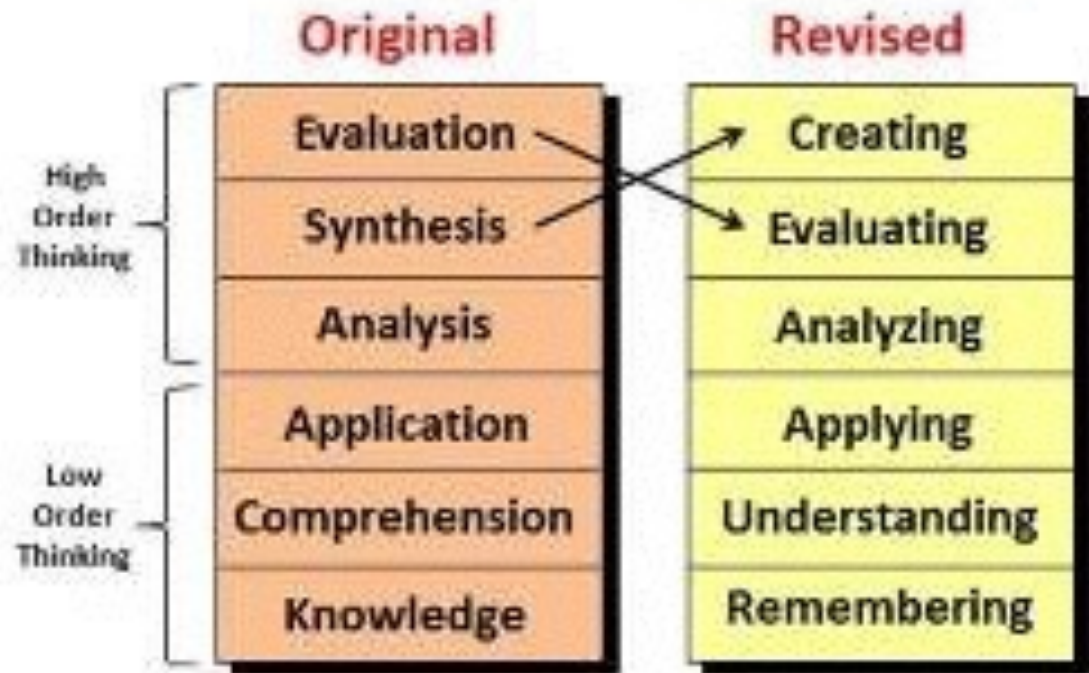
Some interesting facts



**Benjamin S. Bloom
(1913 – 1999)**

Drew up levels of thinking behaviors from the simple recall of facts at the lowest level up to evaluation at the highest level

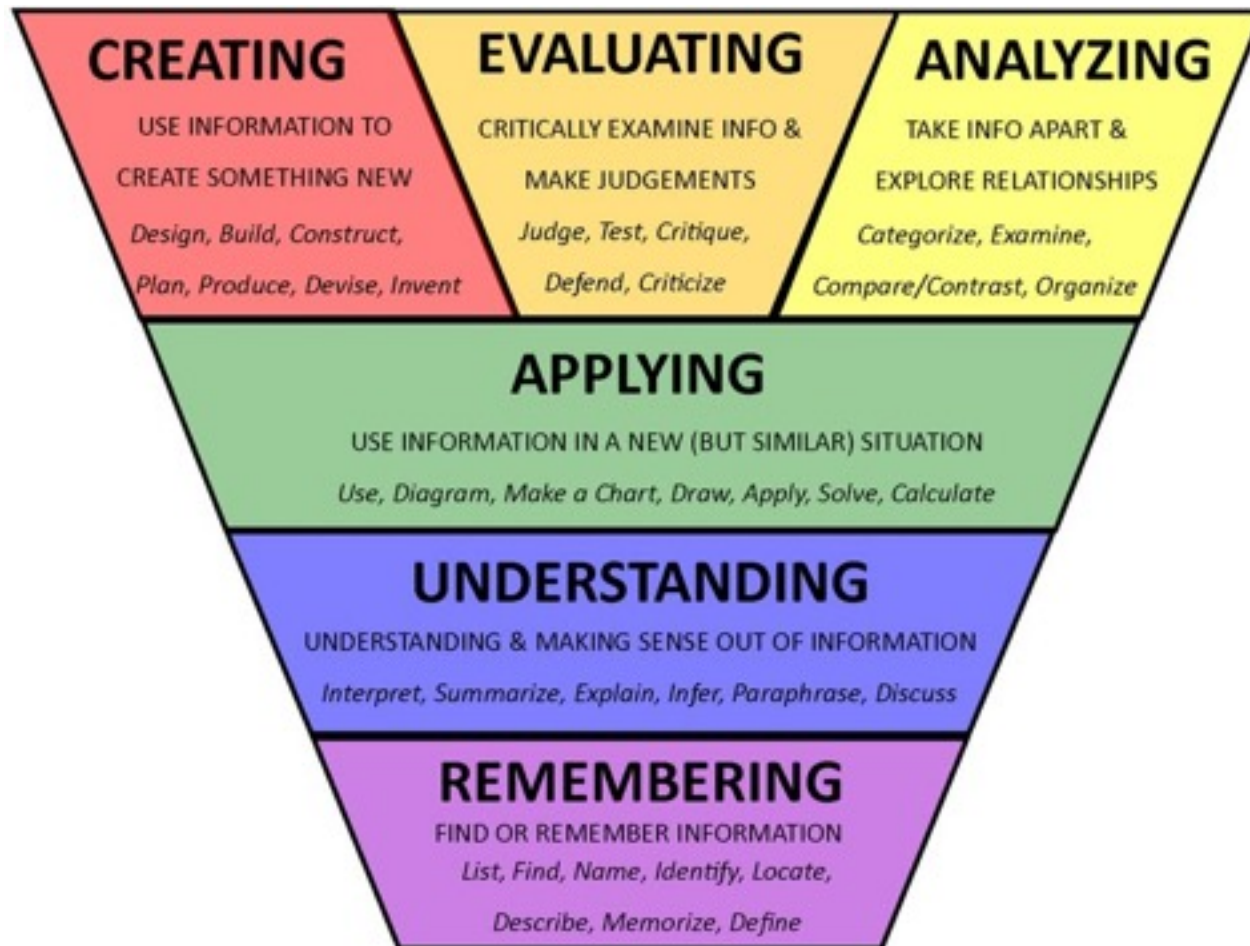
Evolution of Bloom Taxonomy



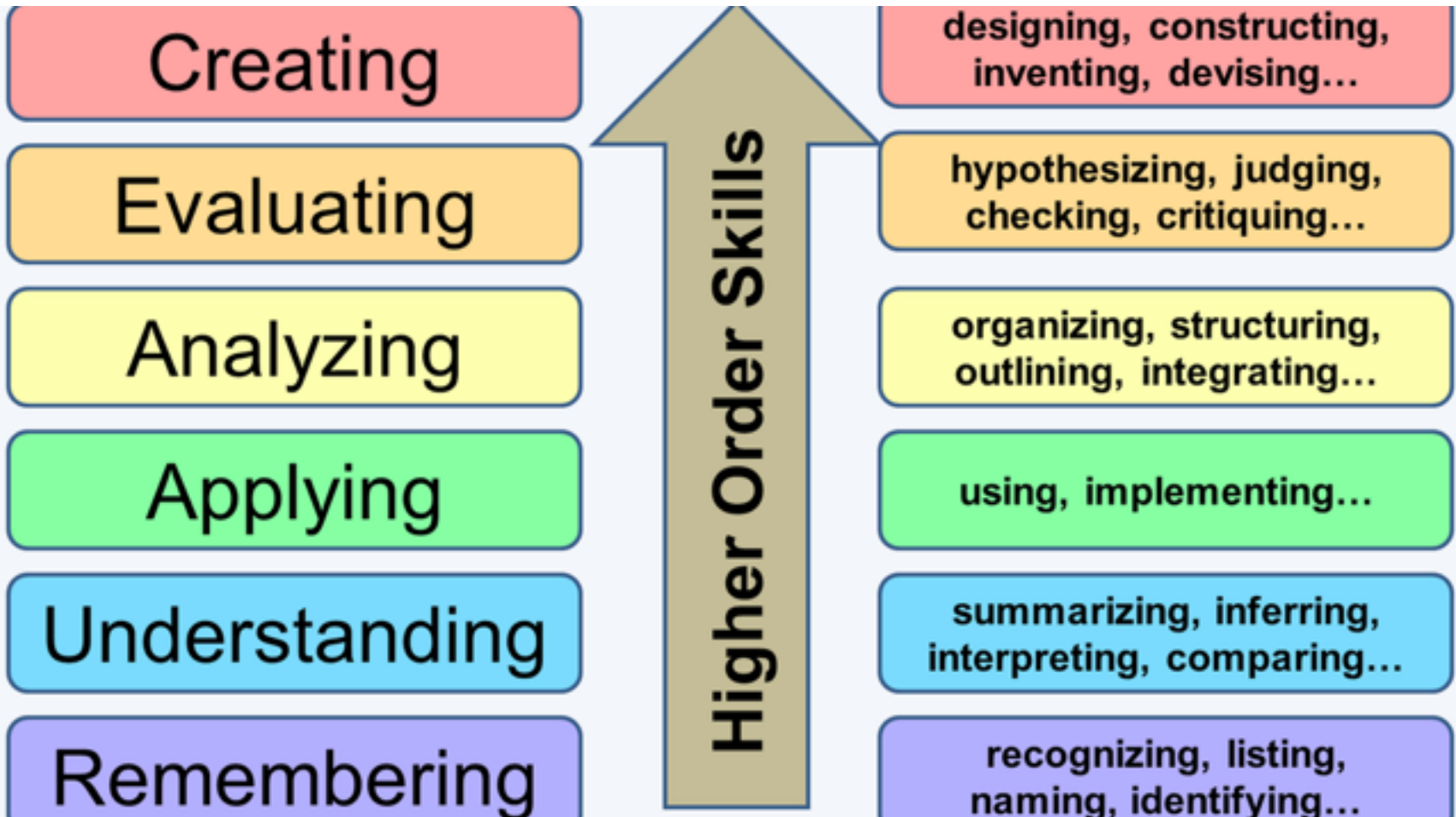
Bloom's Taxonomy

Hots (High order thinking skills)

Lots (Lower order thinking skills)



HOTS AND LOTS



Checklist

Applying Bloom's Taxonomy in Your Classroom

1. REMEMBER

Students are expected to retrieve information from memory, but aren't expected to change it in any way.



In-Class Instruction

Students memorize a definition of an associative property.

Assessment

Students are given a multiple choice question and asked to recognize the answer, or are asked to recall the answer and fill in a blank.

2. UNDERSTAND

Students are building new connections in their minds.



In-Class Instruction

Students identify the key characteristics needed for an organism to survive in a particular ecosystem.

Assessment

When given the description of a fictitious animal, students explain whether the animal will survive in a given ecosystem.

3. APPLY

Certain procedures or steps are expected to be followed in order to answer new problems.



In-Class Instruction

Students learn about Newton's three laws.

Assessment

Students are asked to examine the information about a car crash and determine which if any of Newton's laws apply to the situation.

4. ANALYZE

Students utilize lower-level thinking skills to identify key elements and examine each part.



In-Class Instruction

Students read a student lab report and identify the evidence to support the finding.

Assessment

Read the results of the scientific study and find supporting statements for each conclusion or finding.

5. EVALUATE

Informational sources are examined to assess their quality and decisions are made based on identified criteria.



In-Class Instruction

Students read about the physical effects of exercise on humans.

Assessment

Read an article about a famous athlete. Identify one piece of information in the article that fails to support the author's case that hard work was the main reason for the athlete's exceptional athletic skills.

6. CREATE

Learners organize information in a new or different way.

new!

In-Class Instruction

Students research the role of economics in business.

Assessment

Students brainstorm reasons for a problem and generate suggested solutions, and design and implement a campaign designed to solve the identified problem.



Adapted from
Assessing Critical Thinking in Middle and High Schools: Meeting the Common Core and
Assessing Critical Thinking in Elementary Schools: Meeting the Common Core
by Rebecca Stebaugh

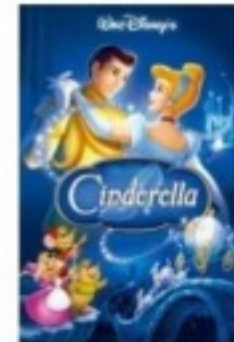


www.eyeoneducation.com



LOTS VS. HOTS

1. What did Cinderella want?
2. Do you think the stepsisters loved Cinderella?
3. If the prince broke the glass slipper, how else could he find Cinderella?
4. Who made Cinderella's dress?
5. Why was the glass slipper important?
6. Did Cinderella like the ball?
7. Who wanted to find Cinderella after the ball?
8. Do you think that everyone who marries a prince will be happy? Why or why not?





Cinderella Questions

1. What did Cinderella want? Knowledge
2. Do you think the stepsisters loved Cinderella? Comprehension
3. If the prince broke the glass slipper, how else could he find Cinderella? Synthesis
4. Who made Cinderella's dress? Knowledge
5. Why was the glass slipper important? Application
6. Did Cinderella like the ball? Comprehension
7. Who wanted to find Cinderella after the ball?
8. Do you think that everyone who marries a prince will be happy? Why or why not? Knowledge

Evaluation



CONCLUSIONS

Higher level questions are those requiring complex application, analysis, evaluation or creation skills. Questions at higher levels of the taxonomy are usually most appropriate for:

- Encouraging students to think more deeply and critically
- Problem solving
- Encouraging discussions
- Stimulating students to seek information on their own



CONCLUSIONS

- Lower level questions are those at the remembering, understanding and lower level application levels of the taxonomy.
- Usually questions at the lower levels are appropriate for:
 - Evaluating students' preparation and comprehension
 - Diagnosing students' strengths and weaknesses
 - Reviewing and/or summarizing content

How to go from lots to hots using questions



Teacher's Planning Kit

LOW LEVEL THINKING SKILLS				HIGH LEVEL THINKING SKILLS							
Knowledge To recall or recognize facts without understanding. Exhibits previously learned material by reciting facts, terms, basic concepts and answers.		Comprehension To show understanding. Finding in <i>formulation</i> from the text. Demonstrating basic understanding of facts and ideas.		Application To use in a new situation. Solving problems by applying acquired knowledge, facts, techniques and rules in a different way.		Analysis To examine in detail. Examining and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalizations.		Synthesis To change or create into something new. Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions.		Evaluation To judge. Presenting and defending opinions by making judgements about information, validity of ideas or quality of work based on a set of criteria.	
Key words: Choose, Observe, Show, Copy, Draw, Spell, Define, Quote, State, Duplicate, Read, Tell, Find, Recall, Trace, Note, Recall, What, Identify, Recognize, When, Label, Record, Where, List, Relate, Which, Understand, Remember, Who, Locate, Repeat, Why, Match, Reproduce, Write, Memorize, Select.		Key words: Ask, Extend, Outline, Observe, Generalize, Predict, Clarify, Give examples, Purpose, Compare, Give, Relate, Contrast, Illustrate, Report, Domain, Substrate, Explain, Infer, Relate, Integrate, Show, Explain, Match, Summarize, Express, Observe, Translate.		Key words: Act, Empty, Practice, Administer, Experiment, Relate, Apply, with, Represent, Associate, Group, Select, Build, Identify, Show, Calculate, Substrate, Double, Categorize, Interpret, Solve, Choose, Interview, Summarize, Clarify, Use, Teach, Connect, Make use of, Transfer, Construct, Manipulate, Translate, Generalize, Model, Demonstrate, Operate, Describe, Perform, Dramatize, Plan.		Key words: Analyse, Examine, Prioritize, Approve, Find, Question, Arrange, Focus, Rank, Assumption, Function, Reason, Breakdown, Group, Relation, Categorize, Highlight, steps, Cause and Effect, Interpret, Reorganize, affect, discussion, Research, Choose, Influence, See, Construct, Inspect, Select, Compare, Investigate, Separate, Create, Invent, Substitute, Discover, Isolate, Similar to, Demonstrate, List, Simplify, Discuss, Multiple, Compare, Distribute, Omit, Take part in, Distinguish, Order, Test for, Divide, Organize, Theme, Establish, Point out, Comparing.		Key words: Adapt, Estimate, Plan, Add to, Experiment, Predict, Build, Extend, Produce, Change, Formulate, Propose, Assess, Hypothesize, Revise, Combine, Imagine, Revise, Compile, Improve, Simplify, Construct, Innovate, Solve, Convert, Integrate, Speculate, Create, Invent, Substitute, Delete, Make up, Suppose, Design, Modify, Test, Decide, Model, Theorize, Discover, Modify, Think, Discuss, Original, Transform, Elaborate, Originate, Visualize.		Key words: Agree, Dispute, Measure, Appraise, Discuss, Opinion, Argue, Effective, Perceive, Assess, Estimate, Persuade, Award, Evaluate, Prioritize, Justify, Explain, Choose, Give reasons, Rate, Compare, Good, Recommend, Conclude, Grade, Rule on, Consider, How to see, Select, Compare, Know? Support, Criteria, Importance, Test, Critique, Useful, Debate, Influence, Validate, Decide, Interpret, Value, Defend, Judge, Why, Defend, Justify, Determine, Mark.	
Actions:	Outcomes:	Actions:	Outcomes:	Actions:	Outcomes:	Actions:	Outcomes:	Actions:	Outcomes:	Actions:	Outcomes:
Describing, Finding, Identifying, Listing, Locating, Naming, Recognizing, Repeating, Writing, Worksheet	Definition, Fact, Label, List, Cub, Reenactment, Text, Workbook, Worksheet	Classifying, Comparing, Exemplifying, Explaining, Inferring, Interpreting, Paraphrasing, Summarizing	Collection, Examples, Explanation, Label, List, Outline, Show and tell, Summary	Carrying out, Executing, Implementing, Using, Journal, Performance, Presentation, Sculpture, Simulation	Demonstration, Diary, Illustrations, Interview, Organizing, Outlining, Structuring	Attributing, Deconstructing, Integrating, Organizing, Outlining, Structuring	Abstract, Chart, Checklist, Database, Graph, Mobile, Report, Spread sheet, Survey	Constructing, Designing, Deciding, Inventing, Making, Planning, Producing, Song, Story	Advertisement, Film, Media product, New game, Printing, Plan, Project, Song, Story	Attributing, Checking, Deconstructing, Integrating, Organizing, Outlining, Structuring, Spread sheet, Survey	Chart, Checklist, Database, Graph, Mobile, Report, Spread sheet, Survey
Questions:	Questions:	Questions:	Questions:	Questions:	Questions:	Questions:	Questions:	Questions:	Questions:	Questions:	Questions:
Can you list three...? Can you read...? Can you select...? How did... happen? How is...? How would you describe...? How would you explain...? How would you show...? What is...? When did... happen? Where is...? Which one...? Who was...? Why were the main...? Why did...?	Can you explain what is happening... what is meant...? How would you identify the type of...? How would you compare...? Contrast...? How would you rephrase the meaning...? How would you summarize...? What can you say about...? What facts or ideas show...? What is the main idea of...? Which is the best answer...? Which statements support...? Will you state or interpret in your own words...?	How would you use...? What examples can you find to...? How would you solve... using what you have learned...? How would you reorganize... to show...? How would you show your understanding of...? What approach would you use to...? How would you apply what you learned to develop...? What other way would you use to...? What would result if...? Can you make use of the facts to...? What elements would you choose to change...? What facts would you select to show...? What questions would you ask in an interview with...?	How would you use...? What examples can you find to...? How would you solve... using what you have learned...? How would you reorganize... to show...? How would you show your understanding of...? What approach would you use to...? How would you apply what you learned to develop...? What other way would you use to...? What would result if...? Can you make use of the facts to...? What elements would you choose to change...? What facts would you select to show...? What questions would you ask in an interview with...?	What are the parts or features of...? How is... related to...? Why do you think...? What is the theme...? What motive is there...? Can you list the parts...? What inference can you make...? What conclusions can you draw...? How would you classify...? How would you categorize...? Can you identify the difference parts...? What evidence can you find...? What is the relationship between...? Can you make a distinction between...? What is the function of...? What idea justifies...?	What changes would you make to solve...? How would you improve...? What would happen if...? Can you elaborate on the reason...? Can you propose an alternative...? Can you invent...? How would you select... to create a different...? How would you change (modify) the plot (plan)...? What could be done to minimize (maximize)...? What way would you design...? Suppose you could... what would you do...? How would you test...? Can you formulate a theory for...? Can you predict the outcome if...? How would you estimate the results for...? What facts can you compare...? Can you construct a model that would change...? Can you think of an original way for the...?	Do you agree with the actions/outcomes...? What is your opinion of...? How would you prove/improve...? Can you assess the value/importance of...? Would it be better if...? Why did they (the character) choose...? What would you recommend...? How would you rate the...? What would you like to defend the actions...? How would you evaluate...? How would you determine...? What choice would you have made...? What would you predict...? How would you prioritize...? What judgement would you make about...? Based on what you know, how would you explain...? What information would you use to support the view...? How would you justify...? What data was used to make the conclusions...?	Do you agree with the actions/outcomes...? What is your opinion of...? How would you prove/improve...? Can you assess the value/importance of...? Would it be better if...? Why did they (the character) choose...? What would you recommend...? How would you rate the...? What would you like to defend the actions...? How would you evaluate...? How would you determine...? What choice would you have made...? What would you predict...? How would you prioritize...? What judgement would you make about...? Based on what you know, how would you explain...? What information would you use to support the view...? How would you justify...? What data was used to make the conclusions...?				
Bloom's Taxonomy: Teacher Planning Kit											