



RIVERS

Supplementary materials

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0.0 ROLES FOR GROUPS

ORGANIZER

SPEAKER

READER

TIMER

HARMONIZER

REPORTER

MATERIAL MANAGER



1.0. WHY ROCKS, LANDSCAPES AND RIVERS?

ROCKS AND RIVERS

by xon





Images © 2011 Pixton.com

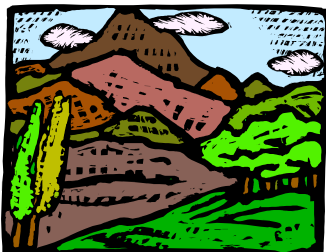



1.1.A. BETTING GAME: WATER AND LANDSCAPES

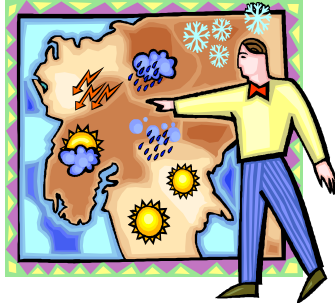
| | |
|-----------|---|
| waterfall |  |
|-----------|---|


| | |
|------|---|
| Tick |  |
|------|---|


| | |
|-----------|---|
| rainfalls |  |
|-----------|---|

| | |
|-----------|---|
| Landscape |  |
|-----------|---|

| | |
|-------|---|
| river |  |
|-------|---|


| | |
|---------|---|
| Weather |  |
|---------|---|


| | |
|----------|---|
| cold/hot |  |
|----------|---|

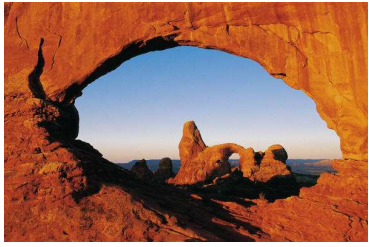
| | |
|-----|---|
| Sea |  |
|-----|---|




| | |
|------------------|---|
| <p>Limestone</p> |  |
|------------------|---|

| | |
|----------------|---|
| <p>Plenary</p> |  |
|----------------|---|

| | |
|-------------|---|
| <p>Step</p> |  |
|-------------|---|

| | |
|----------------|---|
| <p>Erosion</p> |  |
|----------------|---|

| | |
|----------------|---|
| <p>Granite</p> |  |
|----------------|---|

| | |
|--------------|---|
| <p>Cliff</p> |  |
|--------------|---|



1.1.B. HOMEWORK: WATER AND LANDSCAPES

1. Fill in the gaps with the words provided below:

Weathering is the effect of **water** on rocks

Erosion is the action of the water and wind on the surfaces

Waterfalls are in the **upper part** of the river

Not all the rivers end in the **sea**

Estuaries and **deltas** are not the same

Cold and heat can break down the rocks.

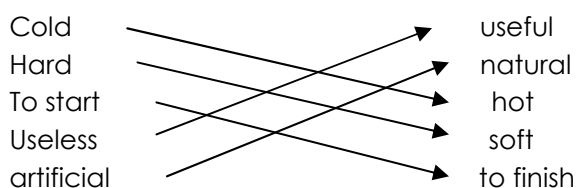
Granite is harder than limestone

The vegetation protects the **soil**

Artificial lakes can damage ecosystems

Rivers are useful for people

2. Draw lines to match each word with its opposite:



1.2. MISSING WORDS

ROCK LANDSCAPES

Different rocks are weathered in **different** ways, so each rock produces its own landscape:

Granite landscape: tors, spheroid granite boulders, **onion-skin** weathering.

Sandstone landscape: angular forms, cliffs, **dunes**.

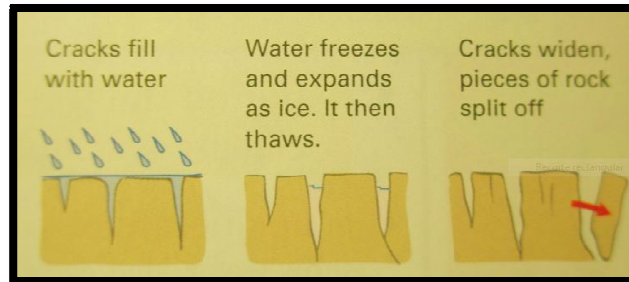
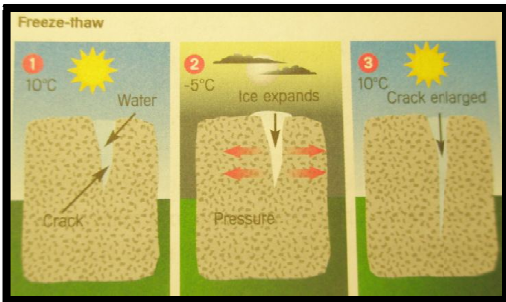
Basalt landscape: flows of lava, **hexagonal** pillars.

Chalk and limestone landscapes (karst): dolines, **caves**, caverns, holes, stalactites, swallow-hole

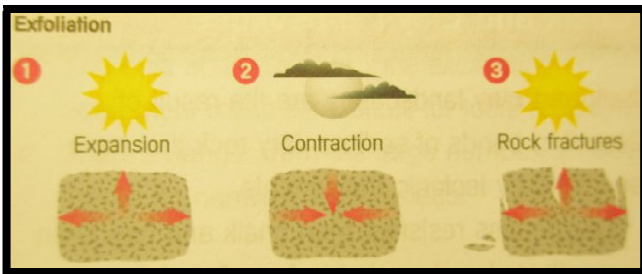


1.4.A. FILL IN THE GAPS

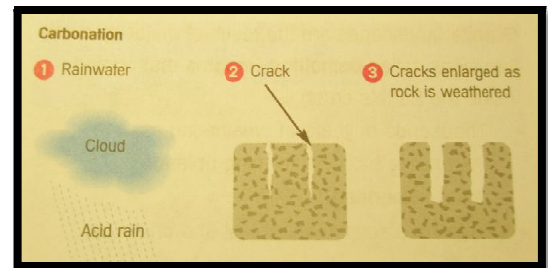
FREEZE-THAW



EXFOLIATION



CARBONATION



ABRASION



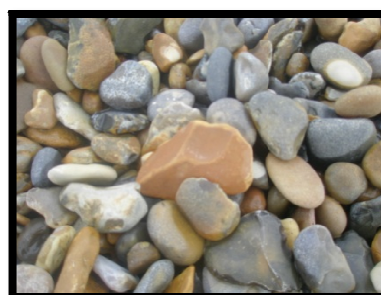
BIOLOGICAL WEATHERING



SAND



PEBBLES





1.4.B. FILL IN THE GAPS

WHAT IS WEATHERING?

Rocks are solid. However, wind, gases from the atmosphere, water, ice or living beings can break them down. **Weathering** is the breaking down of rocks into small particles such as sand and **pebbles**. It may be:

Mechanical weathering is the breaking down of rocks in **smaller** pieces by physical processes. **Freeze-thaw** is the fracture of rock by repeated frosts: water during the **day** and ice during the **night** so the crack is enlarged. **Exfoliation** is due the expansion in hot **temperatures**. during the day, and contraction in cold nights. **Abrasion** rocks are broken down by particles such as sand carried by **wind** or water.

Chemical weathering is the breaking down of rocks by chemical **reactions**. Some rocks can react with water (hydrolysis), **oxygen** (oxidation) and with carbonic acid from the acidic **rain** (carbonation).

Biological weathering is the breaking down of rocks by living **organisms**, for example damage from **tree** roots, from **animals** walking or from machinery.



1.5. A. LOOP GAME

| | | |
|---|-----------------------------------|-------------------------------------|
| Suspension and solution | Erosion | Sand and pebbles |
| The process of carrying away small rock particles is..... | The small rock particles are..... | The main agents of erosion are..... |

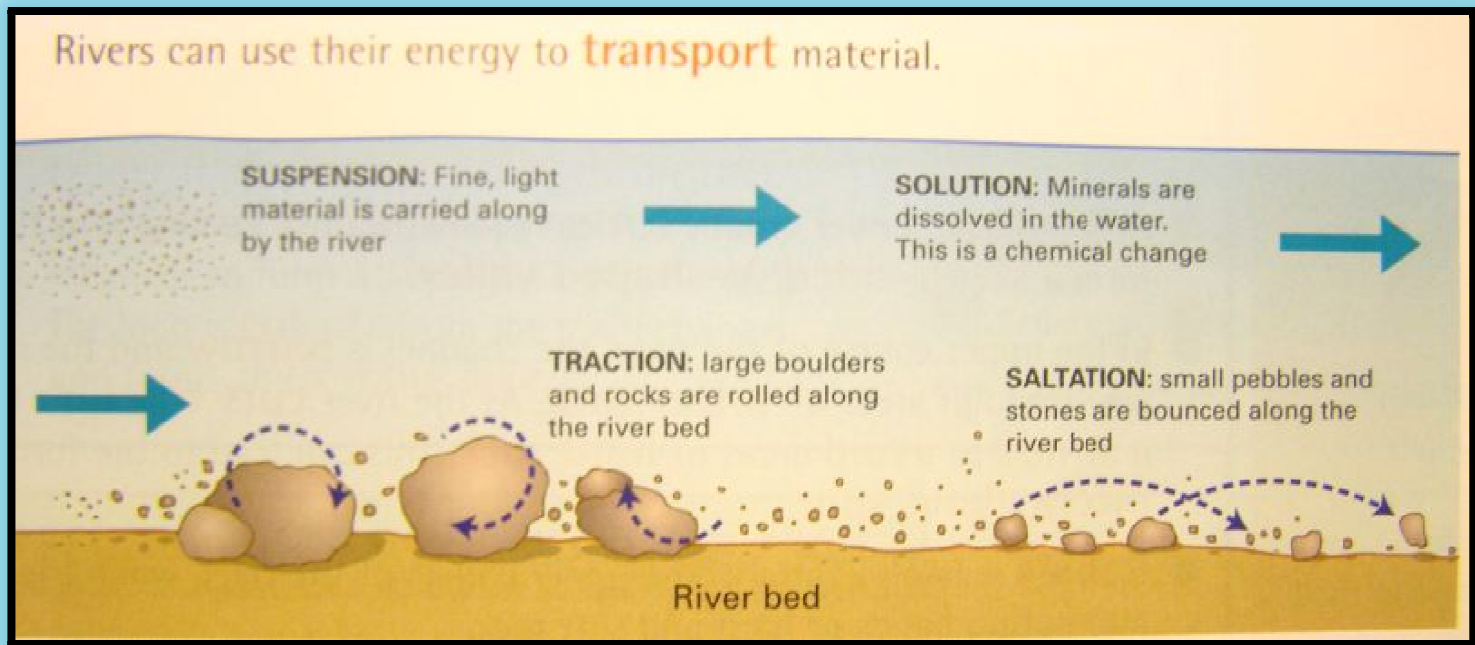
| | | |
|-----------------------------------|--|--|
| Water, wind, animals | In 4 ways | Hydraulic action |
| In how many ways do rivers erode? | The force of the flowing water on beds and banks is..... | The sand carried by the river has a sandpaper effect called..... |

| | | |
|--|--|--|
| Abrasion | Attrition | Calcium carbonate |
| When the stones collide they become rounder and smaller, this process is called..... | The acidic water dissolve rocks made of..... | The dissolution of carbonated rocks is called..... |

| | | |
|--|--|--|
| Corrosion | Load | Capacity |
| The material carried by a river is called its | The maximum load a river can carry is its | The load is transported in 4 ways: traction, saltation ... |



1.5. B. TESTING YOURSELF!





1.6. A. ORDER THE PIECES OF THE TEXT

TEXT TO BE CUT OUT

1.1. WHAT IS DEPOSITION?

In places where the river slows down, it loses energy and deposits

some of the material it is transporting inside bends of meanders, and middle and lower course or the

river. Heaviest materials are deposited first and sand and clay are deposited last. Minerals in

solution becomes salt in the sea.

Depending on their size, the particles can be

classified as: Boulders, Cobbles, pebbles, sand, silt and clay.



1.9. READING THE LANDSCAPE



BAŞALT LANDSCAPE

LAVA IN BORGARNES (ICELAND) © ©Xon Vilahur I Godoy



GRANITELANDSCAPE

S'Agaró Costa Brava. Catalunya ©Xon Vilahur I Godoy





SAND LANDSCAPE

Douz Tunisia 2005 ©Xon Vilahur i Godoy





KARST LANDSCAPE

ILLA DE GOZO MALTA set 2009

Xon Vilahur I Godoy





| | | | |
|-----------------------|----------------------|------------|---------------------|
| PICTURE NUMBER | MAIN ROCK | | |
| CLIMATE (if relevant) | SHOULD BE PROTECTED? | | |
| WEATHERING | CHEMICAL | MECHANICAL | BIOLOGICAL |
| | | | |
| EROSIVE AGENT | | | |
| USE | ECONOMIC | TOURISM | GEOLOGICAL INTEREST |
| | | | |
| | | | |



2.1. LISTEN TO A SONG

"River of Dreams" Billy Joel

In the middle of the night
 I go walking in my sleep
 From the mountains of faith
 To the river so deep
 I must be lookin' for something
 Something sacred i lost
 But the river is wide
 And it's too hard to cross
 even though I know the river is wide
 I walk down every evening and stand
 on the shore
 I try to cross to the opposite side
 So I can finally find what I've been
 looking for
 In the middle of the night
 I go walking in my sleep
 Through the valley of fear
 To a river so deep
 I've been searching for something

Taken out of my soul
 Something I'd never lose
 Something somebody stole
 I don't know why I go walking at night
 But now I'm tired and I don't want to
 walk anymore
 I hope it doesn't take the rest of my
 life
 Until I find what it is I've been
 looking for
 (Three beat Pause)
 In the middle of the night
 I go walking in my sleep
 Through the jungle of doubt
 To the river so deep
 I know I'm searching for something
 Something so undefined
 That it can only be seen
 By the eyes of the blind
 In the middle of the night

I'm not sure about a life after this
 God knows I've never been a spiritual
 man
 Baptized by the fire, I wade into the
 river
 That is runnin' through the promised
 land
 In the middle of the night
 I go walking in my sleep
 Through the desert of truth
 To the river so deep
 We all end in the ocean
 We all start in the streams
 We're all carried along
 By the river of dreams
 In the middle of the night



2.2.A.RUNNING DICTATION

1. Discharge is the amount of water in a river.

2. It's measured in cubic meters per second (m^3/s).

3. Discharge usually increases from source to mouth because tributaries add water to the main channel.

4. As discharge increases, the width and depth also increase.

5. The following factors affect the amount of discharge:

6. Rainfall , temperature, previous weather, relief, rock type, land use .

7. Velocity is the speed of the river.

8. It's measured in m/s ; it usually increases from source to mouth.

9. The hydrograph shows the changes in river discharge over time



2.2.B. DISCHARGE AND VELOCITY

2.2. DISCHARGE AND VELOCITY

Discharge is the amount of water in a river. It's measured in cubic meters per second (m^3/s). Discharge usually increases from source to mouth because tributaries add water to the main channel. As discharge increases, the width and depth also increase.

The following factors affect the amount of discharge:

Rainfall , temperature, previous weather, relief, rock type, land use .

Velocity is the speed of the river. It's measured in m/s ; it usually increases from source to mouth.






The hydrograph shows the changes in river discharge over time



2.3. LET'S DRAW A HYDROGRAPH!

Graph language

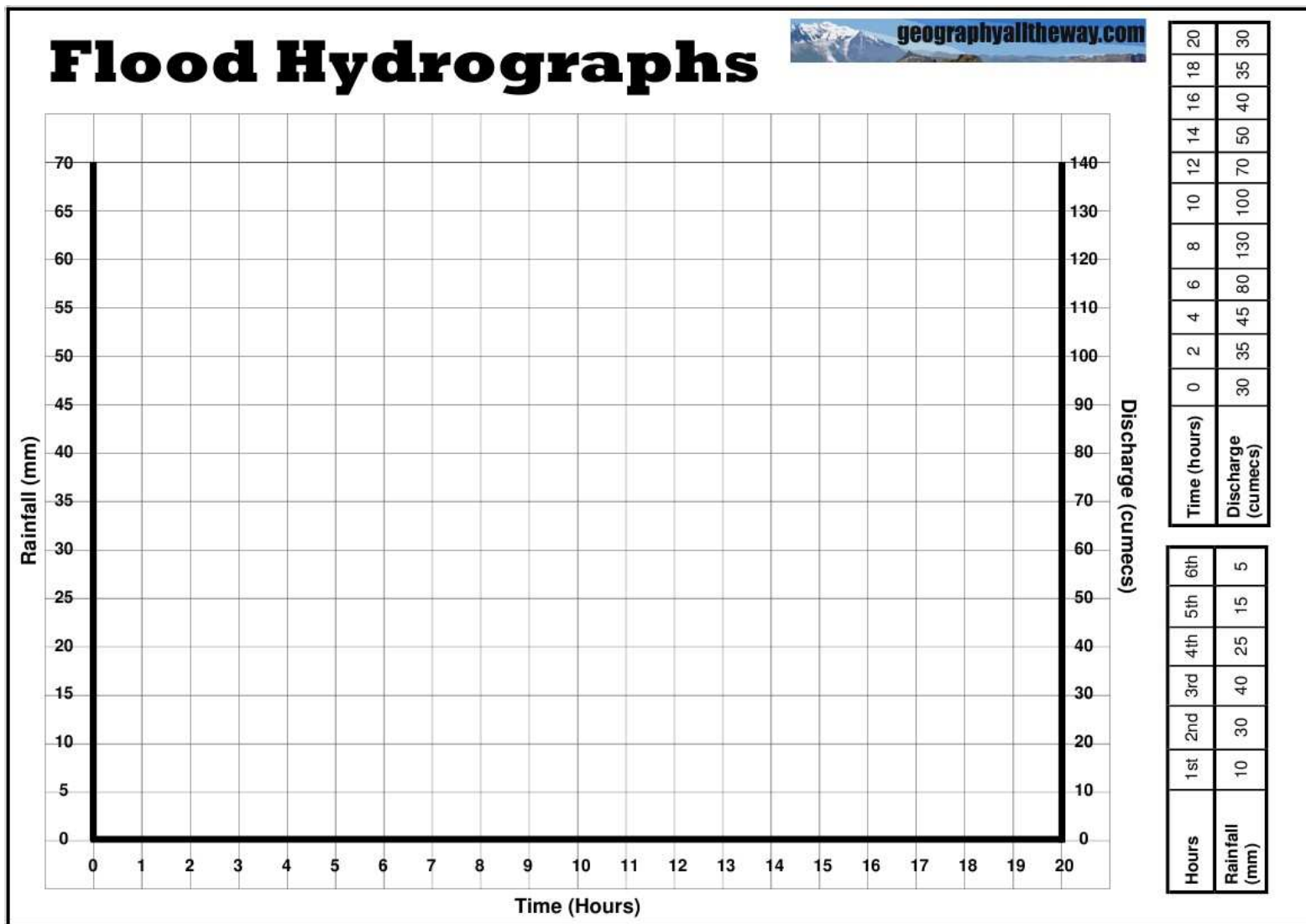
DATA: Graph title, X axis label, Y axis label, and source

| TYPES AND DESIGN | | | USEFUL WORDS | | | |
|---|---|---|--|--|---|---|
| BAR GRAPH | LINE GRAPH | AREA GRAPH | Prepositions: between... and.... From.... to.... | | | |
| Direction: vertical, horizontal |  |  | Movement: Up | | Movement: Down | No Movement |
|  | | | <ul style="list-style-type: none"> ▪ Rose ▪ Went up ▪ Increased ▪ Grew | | <ul style="list-style-type: none"> ▪ Fell ▪ Dropped ▪ Decreased ▪ Sank ▪ Went down | <ul style="list-style-type: none"> remained steady were unchanged |
| Shape: rectangle, Cylinder | BUBBLE GRAPH | PIE CHART | Adverbs | | Adjectives | |
| |  |  | <ul style="list-style-type: none"> ▪ gently ▪ sharply ▪ suddenly ▪ steeply | <ul style="list-style-type: none"> ▪ gradually ▪ slightly ▪ a little ▪ a lot | <ul style="list-style-type: none"> ▪ gentle ▪ sharp | <ul style="list-style-type: none"> ▪ sudden ▪ gradual ▪ slight |

Create your own graphs: <http://nces.ed.gov/nceskids/createagraph/default.aspx?ID=a2e1a69d9a4a465cb3f6a6c74dd49cf5>



2.3. LET'S DRAW A HYDROGRAPH!





2.4. DISCOVERING A RIVER

TEXT TO CUT

We are in Ull de Ter, in order to see the source of the river. Mountains here are much higher than our highlands in Sheffield: but there are also a lot of waterfalls.



In Camprodon the river passes through the village and there are rapids, waterfalls and plunge-pools. The guide has explained that this is the Upper course of the river.



Today we are visiting Roda de Ter, where mountains are not so high, but there are still waterfalls and meanders as well.



We spent a nice day in Roda and Vic yesterday; today we are visiting a huge reservoir of water called Susqueda, not far away from La Cellera where we plan to have lunch. I am sure that reservoirs are always in the middle course of a river.



Now we are walking in Girona, also called the city of the 4 rivers, because "Galligans", "El Guell" i "L'Onyar" join the river Ter, increasing its discharge. Probably the lower course of the river starts here.



Here the landscape is like our lowlands! The mouth of the river is between Torroella and Pals, now we are lying on the beach near the sea, getting tanned and relaxing after a hot week in Catalunya!



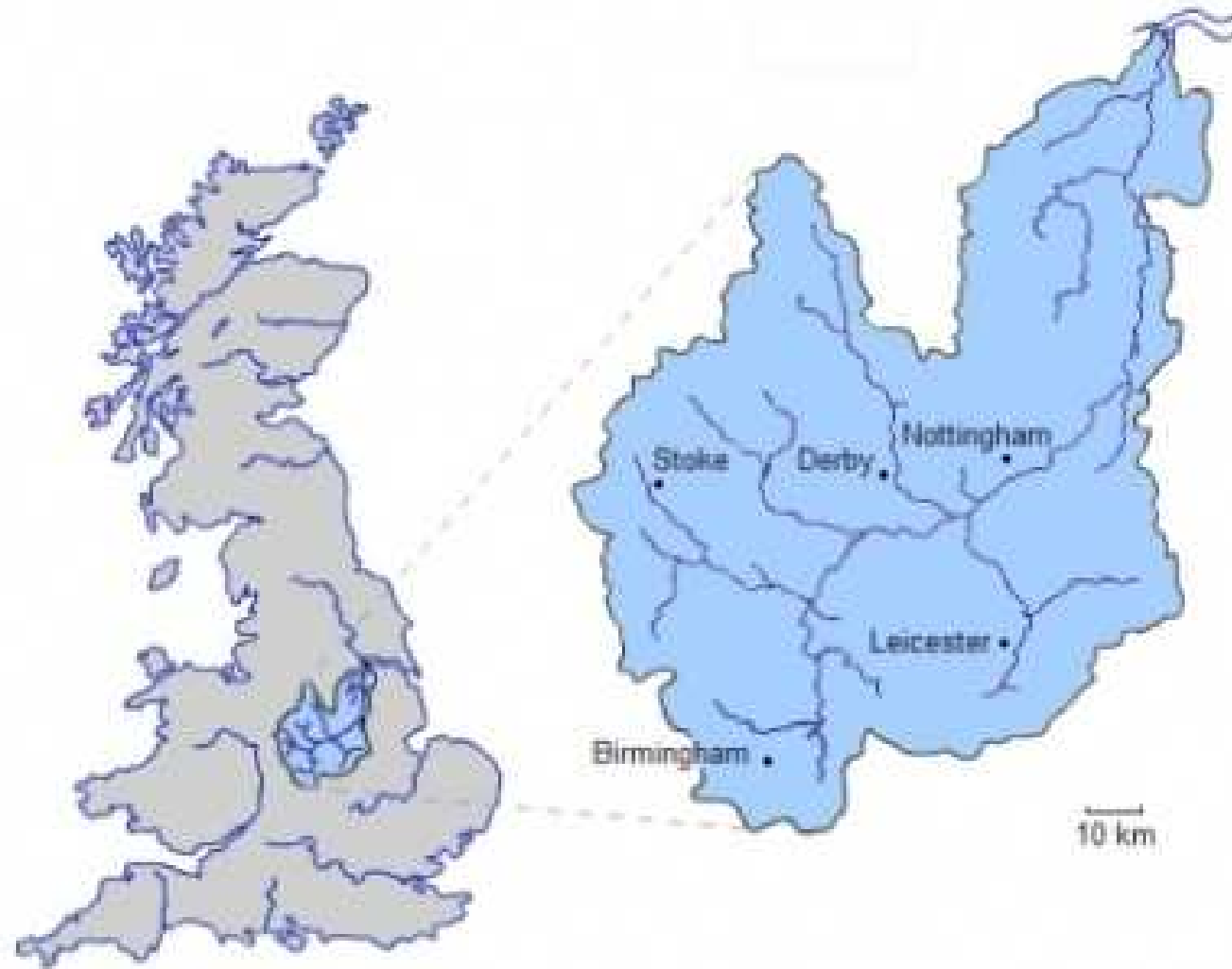
2.5. VALLEY CROSS PROFILE

TABLE COMPLETED

| | A. UPPER VALLEY | B. MIDDLE VALLEY | C. LOWER VALLEY |
|---------|------------------------------|---|-------------------------------------|
| SHAPE | Narrow V-shaped | Wider V-shaped | Wide flat |
| SIDES | Steep | Gentle | Very gentle |
| EROSION | Downwards (vertically) | Downwards and sideways (vertically and laterally) | Sideways (laterally) and deposition |
| BEDLOAD | Angular boulders and cobbles | Smooth and round pebbles | Sand, silt and clay |



3.1. TRENT RIVER BASIN



<http://factoidz.com/facts-about-the-river-trent-uk/>



3.1.B. RIVER BASIN RUBRIC

| | Novice | Apprentice | Practitioner | Expert |
|---|--|---|--|--|
| Unit conversion: To convert km² in miles² and Ha | There were so many errors in unit conversion that the problem could not be resolved. | Some parts may be correct, but a correct answer is not achieved. | <ul style="list-style-type: none"> The solution shows that the student has a good understanding of unit conversion and the major concepts necessary for its solution. The solution is not the good one. | Applies procedures accurately to correctly solve the problem and verify the results. |
| Procedure : To calculate the river basin in km² | Does not know common strategies or procedures for solving problem. | With assistance can manage common strategies or procedures for solving problem. | A plan for solving the problem is clearly understood and main procedures and strategies are in place. The solution is essentially correct, except for minor aspects. | Clear evidence of plan for solving problem and all strategies and procedures are clearly understood. Errors are minimal, if present. |
| Communication To explain the way to calculate an irregular surface | There is no explanation of the solution, the explanation cannot be understood or it is unrelated to the problem. | There is an incomplete explanation; it may not be clearly presented. | Explanation is clear and all major steps are present. Some details may be missed or some language may not be completely precise. | Explanation lays out problem solution clearly and completely. More than one solution is indicated, or detail of solution shows deep understanding. |

Adapted from <http://www.sites4teachers.com/links/redirect.php?url=http://www.rubrics4teachers.com/pdf/MathProblemSolvingAnyGrade.pdf>



3.2. WATERFALLS AND RAPIDS

NAME:

COUNTRY:

HEIGHT: feet

HEIGHT: meters

NAME:

COUNTRY:

HEIGHT: feet

HEIGHT: meters

NAME:

COUNTRY:

HEIGHT: feet

HEIGHT: meters





NAME:

COUNTRY:





HEIGHT: feet

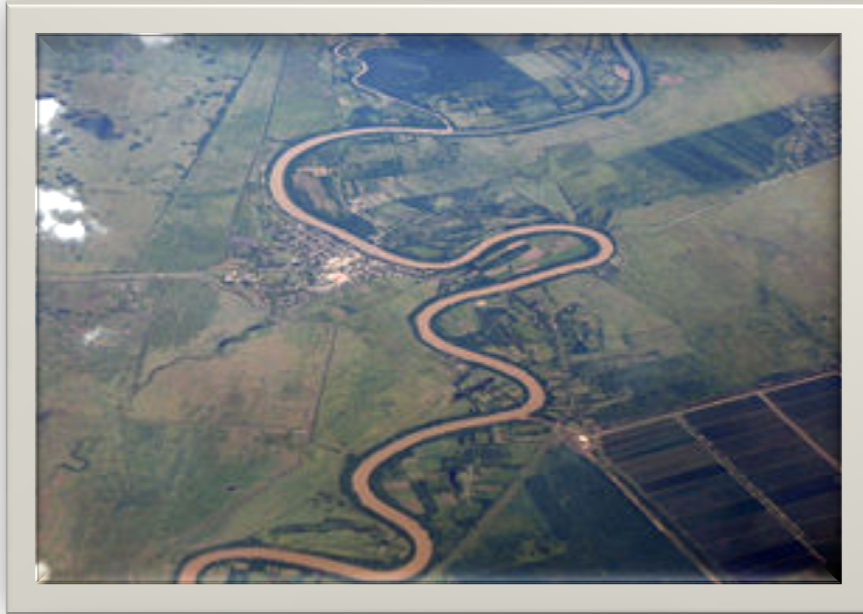
HEIGHT: meters



| | | | | |
|-------------------------------|--|--|--|---|
| <p>meander</p> | <p>1. They are large bends in a river, which normally occur in the middle and lower courses where the water is moving more slowly. The river forms S-shaped bends.</p> |  | <p>a. As the river enters the middle course the gradient of the river becomes less steep. Lateral erosion becomes more important and the river starts to swing from side to side</p> | <p>A. They can be used for canoeing</p> |
| <p>fluvial terrace</p> | <p>2. They are elongated deposits of fluvial sediments that border the sides of floodplains and fluvial valleys all over the world. They lie parallel to and above the river channel and its floodplain.</p> |  | <p>b. They are due to changes in elevation or changes in the base level or in the volume of the fluvial flow (changes in climate).</p> | <p>B. Good location for settlements because they are above the flood level. Often there is extraction of gravel and sand for building. Many prehistoric sites are found here.</p> |
| <p>ox-bow lake</p> | <p>3. It's horseshoe-shaped and often temporary. It's formed when a meander of a river is cut off from the main channel.</p> |  | <p>c. Over time, the loop of a meander becomes tighter. If it becomes too tight, the river may cut across the neck of the meander to form a straight river channel.</p> | <p>C. Large reservoir of water and nutrients for orchards and vegetable plots</p> |
| <p>floodplain</p> | <p>4. It's a flat area around a river that regularly floods. Each time a river floods, silt (alluvium) is deposited here.</p> |  | <p>d. They are due to a combination of erosion and deposition on either side of a river</p> | <p>D. They are very fertile and good for farming and agriculture, often highly populated, and farming employs many people.</p> |



| | | | | |
|-------------------------------|--|--|---|---|
| <p>meander</p> | <p>1. They are large bends in a river, which normally occur in the middle and lower courses where the water is moving more slowly. The river forms S-shaped bends.</p> |  | <p>As the river enters the middle course the gradient of the river becomes less steep. Lateral erosion becomes more important and the river starts to swing from side to side</p> | <p>They can be used for canoeing</p> |
| <p>fluvial terrace</p> | <p>2. They are elongated deposits of fluvial sediments that border the sides of floodplains and fluvial valleys all over the world. They lie parallel to and above the river channel and its floodplain.</p> |  | <p>b. They are due to changes in elevation or changes in the base level or in the volume of the fluvial flow (changes in climate).</p> | <p>B. Good location for settlements because they are above the flood level. Often there is extraction of gravel and sand for building. Many prehistoric sites are found here.</p> |
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3.4. WHERE THE RIVER ENDS, THE BEACH STARTS

MARC



TEACHER



ALBA



LLUÍS

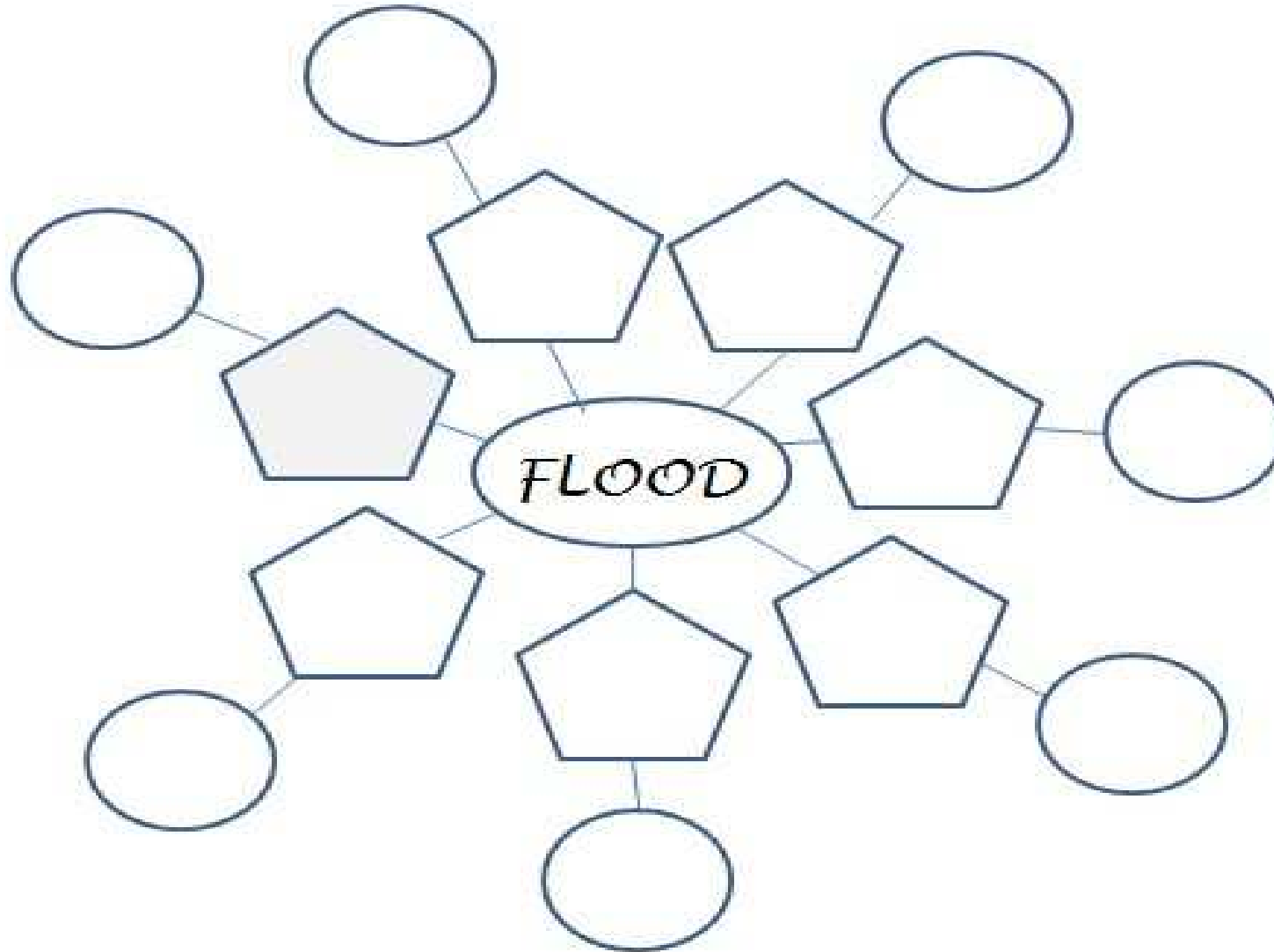


GEMMA





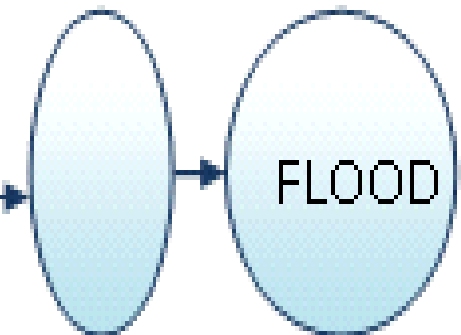
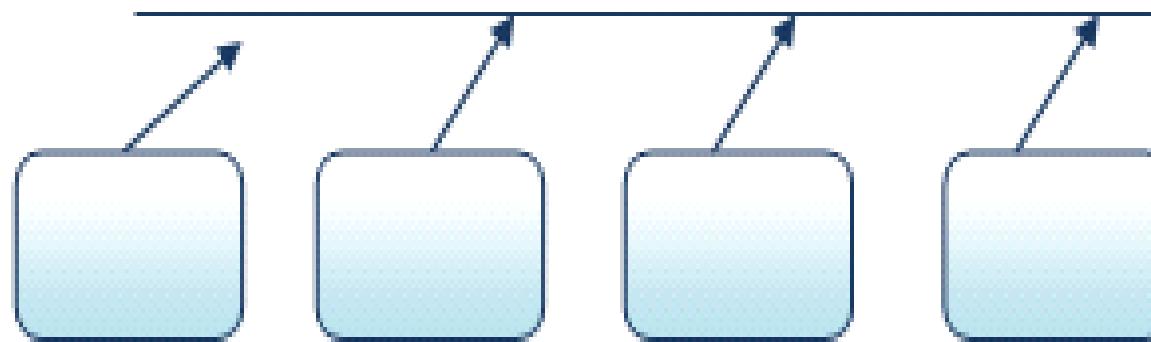
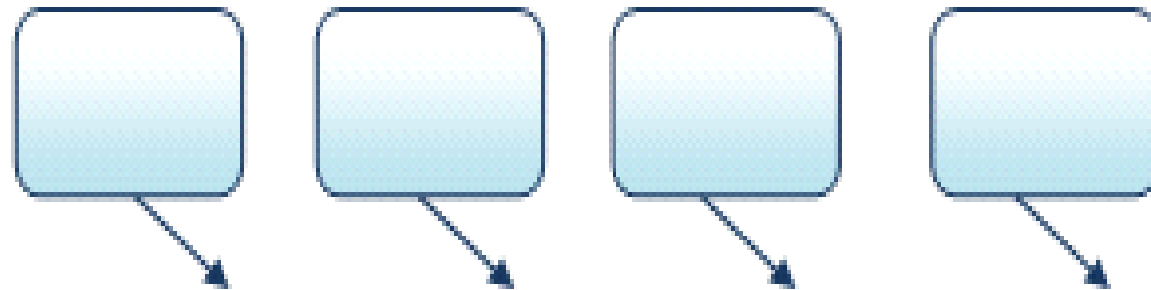
3.5 A. FLOODINGS





3.5 B. FLOODINGS

ACTIONS



RESULTS



3.6. RIVER USES

SPORTS: Canoeing, rafting, swimming, fishing, running, diving, cycling, walking...

HERITAGE: Educational value, traditional technology, traditional jobs, local stories.

WILDLIFE: otter, heron, river trees, invertebrates, ducks, landscape...







POWER AND WATER: Electricity, water reservoir, industry, mill, building...

AGRICULTURE: Farming, Mills, Rice fields, orchards, vegetable gardens, crops,...

HOMEWORK. SOLUTION

 Fill in the blanks with the words provided below.

The River Ebre is *used* for:

-  **Drinking water** - Water from the River Ebre and its *tributaries*...feeds .. *Reservoirs* that provide many of us with our drinking water.
-  Ebre provides..... *irrigation*..... to adjacent farms and supports agriculture.
-  The River Ebre has played an important part in the ... *transport* of many goods in the past. The Ebre has been used for trade as early as the Roman... *period* . With the growth of road and rail the rivers are used *less* for transport.
-  There are many *power* .stations by the side of the River Ebre, and its tributaries. The power stations use coal to heat water until it turns into steam. The steam turns ... *turbines* that make electricity. Huge amounts of water are needed by the stations which is why they are built (by) near big rivers.
-  Leisure - You can have a lot of *fun* .on a river. You can go rowing, canoeing, boating, water-skiing and *fishing*
-  Construction - Gravel and *sand* .from the Ebre are used in buildings.



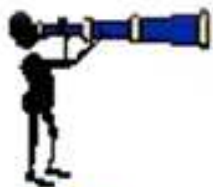





3.7. AMAZING WORLD'S WATER RECORDS

| | |
|--|--|
| LONGEST RIVERS Nile, Africa (6,825 km) Amazon, South America (6,437 km) Chang Jiang (Yangtze), Asia (6,380 km) Mississippi, North America (5,971 km) Yenisey-Angara, Asia (5,536 km) | MAJOR LAKES (By Size) Caspian Sea, Asia-Eur. (371,000 sq km) Superior, North America (82,100 sq km) Victoria, Africa (69,500 sq km) Huron, North America (59,600 sq km) Michigan, North America (57,800 sq km) |
| DEEPEST LAKES Baikal, Russian Fed. (5,315 ft) Tanganyika, Africa (4,800 ft) Caspian Sea, Asia-Europe (3,363 ft) Malawi or Nyasa, Africa (2,317 ft) Issyk-Kul, Kyrgyzstan (2,303 ft) | DRIEST INHABITED PLACES (Rain fall in inches per year) Aswan, Egypt 0.02" Luxor, Egypt 0.03" Arica Desert, Chile 0.04" Ica, Peru 0.1" Antofagasta, Chile 0.2" |

| World's 5 Tallest Waterfalls: | Height | Country | WORLD'S 5 LARGEST WATERFALLS | Volume | Width | Watercourse Country |
|-------------------------------|------------|--------------|------------------------------|---------------|----------------------|---------------------|
| 1. Angel Salto | 3,212 feet | Venezuela | Inga Falls | 1,500,000 cfs | ? ft / ? m | Congo River Congo |
| 2. Tugela Falls | 3,110 feet | South Africa | Livingstone, Chutes de | 1,240,000 cfs | 15,840 ft / 4,828 m | Congo River Congo |
| 3. Tres Hermanas, Cataratas | 3,000 feet | Peru | Boyoma Falls | 600,000 cfs | 4,500 ft / 1,372 m | Lualaba River Congo |
| 4. Olo'upena Falls | 2,953 feet | USA | Guaira, Salto del | 470,000 cfs | 15,840 ft / 4,828 m | Rio Paran Brazil |
| 5. Yumbilla, Catarata | 2,938 feet | Peru | Khone, Chutes de | 410,000 cfs | 35,376 ft / 10,783 m | Mekong River Laos |



4. 1. THE SCIENTIFIC METHOD

1.  OBSERVE
2.  QUESTION
3.  HYPOTHESIZE
4.  EXPERIMENT
5.  CONCLUDE
6.  COMMUNICATE



5.1. SAMPLE OF LAB REPORT RUBRIC

Institut Llagostera Lab Report Evaluation Form

A completed Lab Report should include the following sections:

Heading, Title, Problem, Hypothesis, Materials, Procedures, Data, Conclusion, and Conclusion Questions.



This Lab Report Is Completed To The Best Of My Ability.

X _____

(Student Signature)

Name: _____

Teacher: Xon Vilahur Godoy

Title of Experiment: _____

Date Submitted: _____ Lab Partner(s): _____, _____

| <u>Teacher</u> | <u>Criteria</u> | <u>Student</u> |
|----------------|--|----------------|
| 0, 5, 10 | Clear and Appropriate HEADING, TITLE, PROBLEM , and HYPOTHESIS . | 0, 5, 10 |
| 0, 5, 10 | All MATERIALS listed and a summary of PROCEDURE . | 0, 5, 10 |
| 0, 10, 20 | Appropriate presentation of DATA and observations including graph (s), chart(s), drawing(s), etc. Accuracy of data. | 0, 10, 20 |
| 0, 10, 30, 50 | Clear and concise CONCLUSIONS . Conclusion addresses problem and states knowledge gained. Answers to all QUESTIONS . | 0, 10, 30, 50 |
| 0, 5, 10 | Overall- NEATNESS, GRAMMAR , adheres to FORMAT , etc. | 0, 5, 10 |
| _____ | <-----Total points earned = Lab grade-----> | _____ |

Teacher Comments:



5.2. BEHAVIOR RUBRIC

CLASS BEHAVIOR

INSTITUT DE ILAGOSTERA



Student Name _____

Date _____

Teacher Name: Xon Vilahur i Godoy

| Behavior Skill | Never | Rarely | Most of the Time | Always |
|---|-------|--------|------------------|--------|
| On Time and Prepared | | | | |
| 1. Arrives to class on time | | | | |
| 2. Brings necessary materials | | | | |
| 3. Completes homework | | | | |
| Respects Peers | | | | |
| 1. Respects others property | | | | |
| 2. Listens to peers | | | | |
| 3. Responds appropriate to peers | | | | |
| 4. Respects others opinions | | | | |
| 5. Refrains from abusive language | | | | |
| Respects Teacher/Staff | | | | |
| 1. Follows directions | | | | |
| 2. Listens to Teacher/Staff | | | | |
| 3. Accepts responsibility for actions | | | | |
| Demonstrates Appropriate Character Traits | | | | |
| 1. <i>Demonstrates positive character traits</i> (kindness, trustworthy, honesty) | | | | |
| 2. <i>Demonstrates productive character traits</i> (i.e. patience, thorough, hardworking) | | | | |
| Demonstrates a level of concern for others | | | | |
| Demonstrates a Level of Concern for Learning | | | | |
| 1. Remains on task | | | | |
| 2. Allows others to remain on task | | | | |

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5.3. HOMEWORK RUBRIC

INSTITUT DE LLAGOSTERA HOMEWORK RUBRIC



Name: _____

Teacher: Xon Vilahur i Godoy

Date Submitted: _____

Title of Work: _____

| | Criteria | | | | Points |
|--------------------------------|---|---|---|--|--------|
| | 4 | 3 | 2 | 1 | |
| Assignment Completeness | All items attempted | 9/10 of items attempted. | At least 1/2 of the items attempted. | Less than 1/2 of all items attempted. | — |
| Accuracy | All items are correct. | 9/10 of items are correct. | Between 1/2 and 9/10 of items are correct. | Less than 1/2 of all items are correct. | — |
| Demonstrated Knowledge | Shows complete understanding of the questions, mathematical ideas, and processes. | Shows substantial understanding of the problem, ideas, and processes. | Response shows some understanding of the problem. | Response shows a complete lack of understanding for the problem. | — |
| Requirements | Goes beyond the requirements of the problem. | Meets the requirements of the problem. | Does not meet the requirements of the problem. | | — |
| Legibility | Legible handwriting, typing, or printing .. | Marginally legible handwriting, typing, or printing. | Writing is not legible in places. | Writing is not legible. | — |
| | | | | Total ----> | — |

Teacher Comments:



5.4. PRESENTATION RUBRIC

INSTITUT DE LLAGOSTERA PRESENTATION RUBRIC



Name: _____

Teacher: Xon Vilahur i Godoy

Date of Presentation: _____

Title of Work: _____

| | Criteria | | | | Points |
|--------------------------|--|--|---|---|--------|
| | 1 | 2 | 3 | 4 | |
| Organization | Audience cannot understand presentation because there is no sequence of information. | Audience has difficulty following presentation because student jumps around. | Student presents information in logical sequence which audience can follow. | Student presents information in logical, interesting sequence which audience can follow. | — |
| Content Knowledge | Student does not have grasp of information; student cannot answer questions about subject. | Student is uncomfortable with information and is able to answer only rudimentary questions. | Student is at ease with content, but fails to elaborate. | Student demonstrates full knowledge (more than required) with explanations and elaboration. | — |
| Visuals | Student used no visuals. | Student occasional used visuals that rarely support text and presentation. | Visuals related to text and presentation. | Student used visuals to reinforce screen text and presentation. | — |
| Mechanics | Student's presentation had four or more spelling errors and/or grammatical errors. | Presentation had three misspellings and/or grammatical errors. | Presentation has no more than two misspellings and/or grammatical errors. | Presentation has no misspellings or grammatical errors. | — |
| Delivery | Student mumbles, incorrectly pronounces terms, and speaks too quietly for students in the back of class to hear. | Student incorrectly pronounces terms. Audience members have difficulty hearing presentation. | Student's voice is clear. Student pronounces most words correctly. | Student used a clear voice and correct, precise pronunciation of terms. | — |
| | | | | Total ----> | — |

Teacher Comments:



5.5. FINAL ASSESSMENT EASY

UNIT 1. ROCKS AND WEATHERING

1. Draw lines between the boxes to match each type of landscape with one typical rock formation.

| |
|---------------------|
| GRANITE LANDSCAPE |
| SAND LANDSCAPE |
| BASLAT LANDSCAPE |
| LIMESTONE LANDSCAPE |

| |
|-------------------|
| DUNES |
| SPHEROID BOULDERS |
| CAVES |
| HEXAGONAL PILARS |

2. Which of the following statements about river and landscapes are true? Tick the correct options.

| | |
|--|--|
| Weathering is the effect of weather on rocks. | |
| Erosion is the action of water only. | |
| Waterfalls are in the upper part of the river. | |
| All the rivers end in the sea. | |
| Estuaries and deltas are the same. | |
| Cold and heat can break down the rocks. | |
| Granite is harder than limestone. | |
| (The) Vegetation protects the soil. | |
| Artificial lakes don't damage ecosystems. | |
| Rivers are not useful for people. | |

3. Fill in the blanks:

- a) Carbonated rocks are dissolved by the acid rain in a process called c.....
- b) Sometimes water reacts with a rock, this is called h.....

4. Put the letters in these anagrams in order to form words related with erosion and transportation:

| | | | | | |
|----------|--|--------------|--|-----------|--|
| ACCPAYIT | | CONRSROIO | | STALITNOA | |
| EOSRNIO | | EOLIAXFIO TN | | SDNA | |
| SETSON | | WTGHEIREAN | | SOOILTNU | |

5.

a) Complete the words:

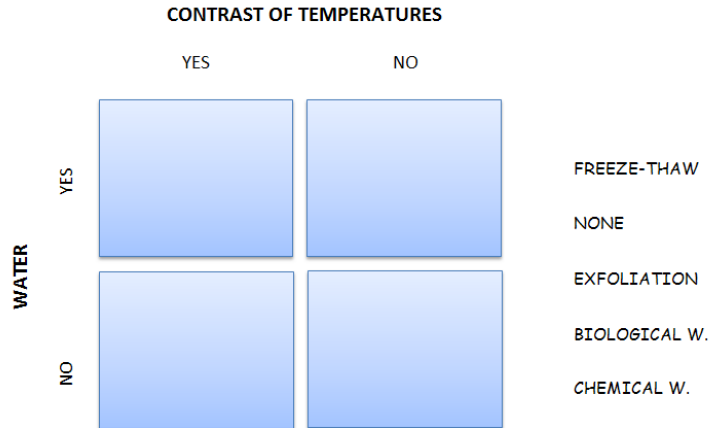
When the r..... slows down it loses its e..... and d..... part of its l.....

b) Classify the rock particles according to its size, from bigger to smaller:

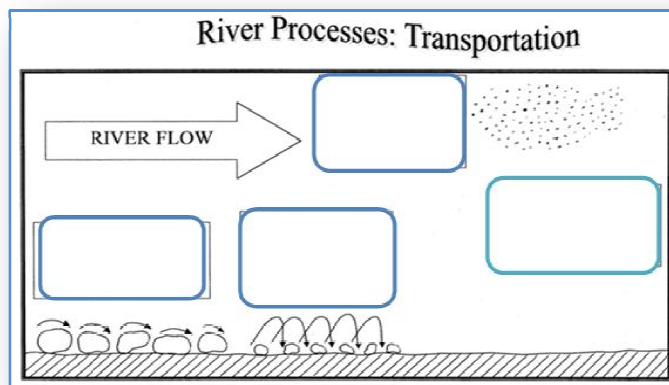
Pebble, sand, clay, boulder



6. Put the following types of weathering inside the cells according to the temperature and disposal of water.



7. Complete the diagram by adding the following words: *Traction, saltation, flotation, suspension*



8. Complete the description of one of the four main rock landscapes by choosing one of the two words in the brackets:

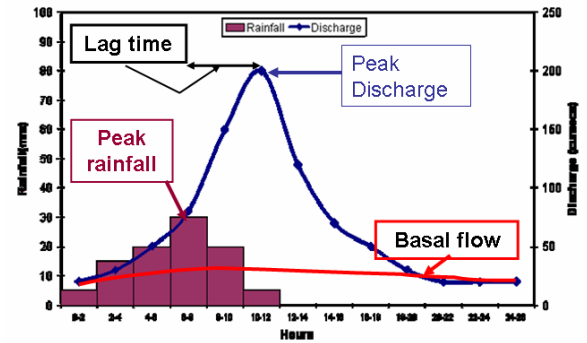
(Granite, basalt) is a rock that produces a particular landscape. It's broken down by *(mechanical/chemical)* weathering. After that the *(wind/water)* erodes the rock and as a result produces the main forms of erosion *(bowls and tors/caves and holes)*. This landscape can be used to practice *(climbing/speleology)* because it also has geological and educational interest.



UNIT 2. RIVER PROCESSES A

1. Looking at the graph, draw lines between the boxes to match each word with its definition:

| | |
|-------------------|--|
| a) Discharge | 1) The highest amount of water in a river following rain |
| a) Hydrograph | 2) The amount of water in a river per second |
| b) Peak discharge | 3) A graph showing rainfall and a river's response to it |
| c) Peak rainfall | 4) The time between peak rainfall and peak discharge |
| d) Lag time | 5) The highest amount of rain in a rainfall event |



2. Fill in the gaps with the words provided:

LONG OF A RIVER

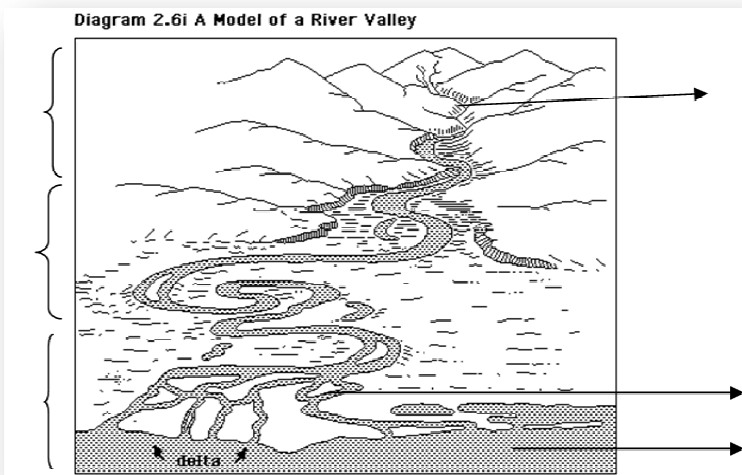
The long of a river is a cross-section from its to its

The course of a river can be divided into 3 main sections: course, course andcourse.

Rivers begin flowing in areas and flow downward to areas

Upper, source, middle, profile, highland, mouth, lowland, profile

3. Label the diagram below:



4. Complete the text using one of the two words in the brackets:

The picture shows a (*U-shaped/V-shaped*) valley. The flanks are (*steep/flat*)

It is in the (*middle/upper*) course of a river.

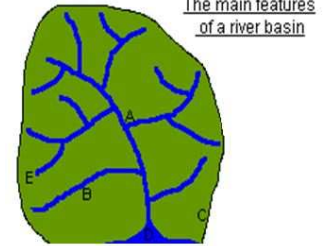




UNIT 3. RIVER LANDFORMS

1. Label the following diagram with these words:

source, mouth, tributary, confluence and watershed.



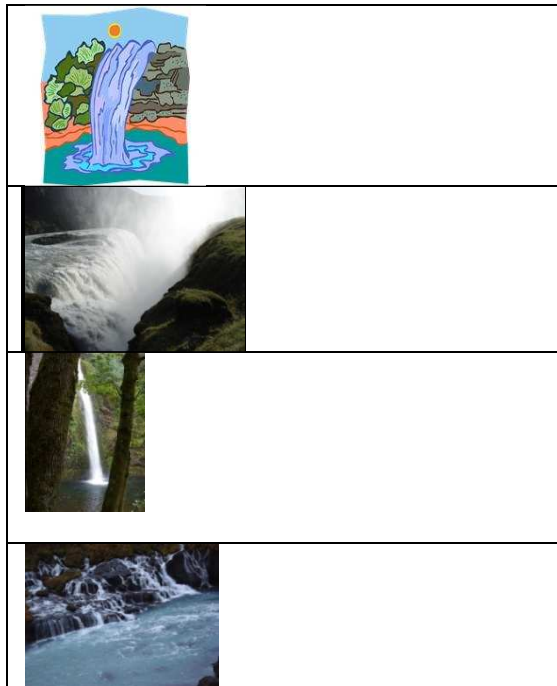
2. Choose the right word to complete the text:

A **waterfall** is a place on a (*river/sea*) where water flows (*vertically/horizontally*).
Waterfalls are a common feature in the (*upper/lower*) course of many large rivers.

Rapids are a series of (*small/big*) waterfalls; these can be found where a (*waterfall/meander*) has retreated.

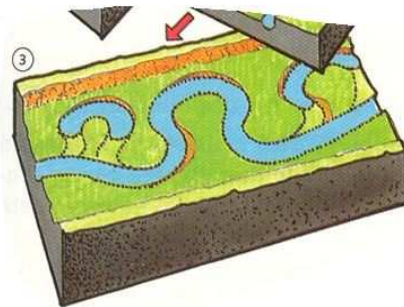
3. Match each name with one picture

| |
|---------------|
| 1. CATARACTS |
| 2. HORSETAILS |
| 3. RAPIDS |
| 4. CASCADES |



4. Label the diagram with the following words:

Meander,
ox-bow lake,
river terrace,
floodplain



5. Complete the text:

Deltas are a feature found at the (*mouth/source*) of large rivers. When a river enters the (*lake/sea*) it deposits its (*load/charge*).

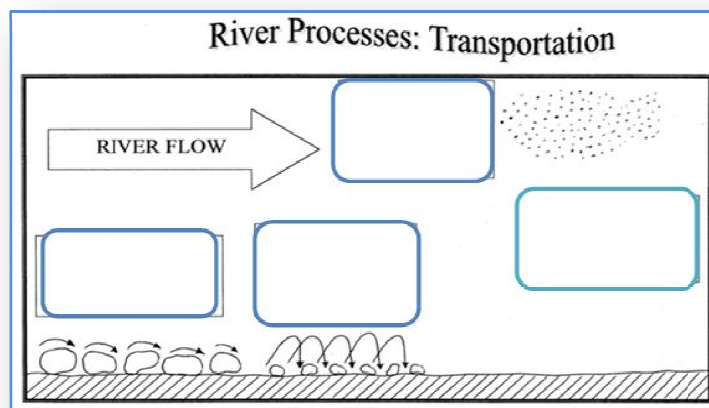
Estuaries are funnel-shaped (*river/lake*) mouths.



6. Put the following types of weathering inside the cells according to the temperature and disposal of water.

| | | CONTRAST OF TEMPERATURES | | |
|-------|-----|--------------------------|----|---------------|
| | | YES | NO | |
| WATER | YES | | | FREEZE-THAW |
| | NO | | | NONE |
| | | | | EXFOLIATION |
| | | | | BIOLOGICAL W. |
| | | | | CHEMICAL W. |

7. Complete the diagram by adding words in the boxes:



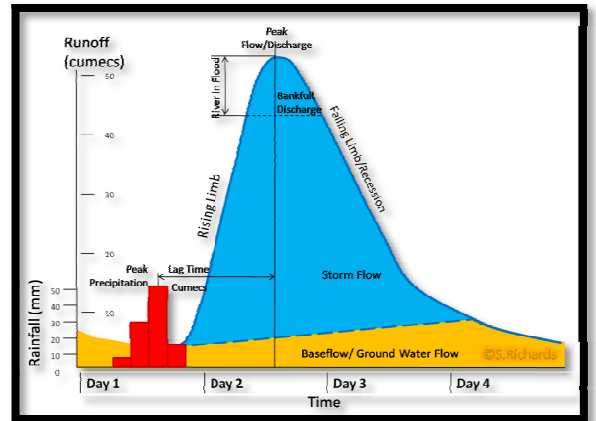
8. Describe one of the four main rock landscapes



UNIT 2. RIVER PROCESSES

1. Looking at the graph, answer the following questions:

- What information does the horizontal axis of the graph show?*It shows the.....*
- In which units is the rainfall expressed?*In.....*
- And the Discharge?*In.....*
- When does the discharge peak?
- How many cm³ has the discharge increased from the base flow until the peak discharge?
- How long is the **lag time**?



2. Fill in the gaps :

The longof a river is a cross-section from its to its

The course of a river can be divided into 3 main sections: course, course andcourse.

Rivers begin flowing in areas and flow downwards to areas

3. According into the text, draw the long profile of a river with its features, then label at least 5 features.

4. Complete the text related to the picture.

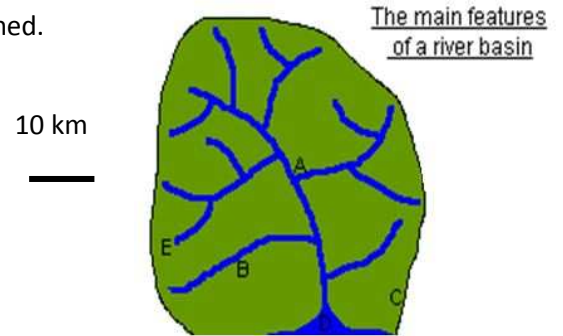
The picture shows avalley. The flanks are It is in thecourse of a river.





UNIT 3. RIVER LANDFORMS

1. Calculate the area of the following river basin:
Label these parts: source, mouth, tributary, confluence, and watershed.



2. Complete the text:

A **waterfall** is a p..... on a river whereflows v..... Waterfalls are a common feature in thecourse of many large r.....

Rapids are a series of small w..... These can be found where a waterfall has r.....

3. Describe two types of waterfalls. You can also make a drawing.

4. Relate the following concepts with the features of the river:

S-shaped bends, lateral erosion, vegetable plots, flat area, horseshoe-shaped, changes in climate.

| meander | fluvial terrace | ox-bow lake | Floodplain |
|---------|-----------------|-------------|------------|
| | | | |

5. Draw the formation of an ox-bow lake in three steps:

| | | |
|---------------------------|---|--|
| 1 | 2 | 3 |
| The river starts swinging | The loop of the meander becomes tighter | The river takes a straighter and faster course |



6. Write down 2 similarities and 2 differences between deltas and estuaries

| similarities | differences |
|--------------|-------------|
| | |
| | |