**Running Water 2** Name:

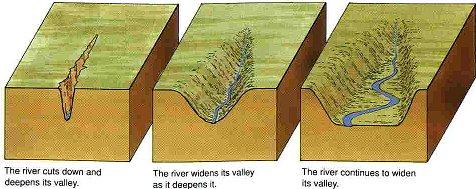
Unit 3: Gradation Period:

Geography 12

**Three Stages of River Development**

1. Youth Stage (upper course)
2. Mature Stage (middle course)
3. Old Age Stage (lower course)

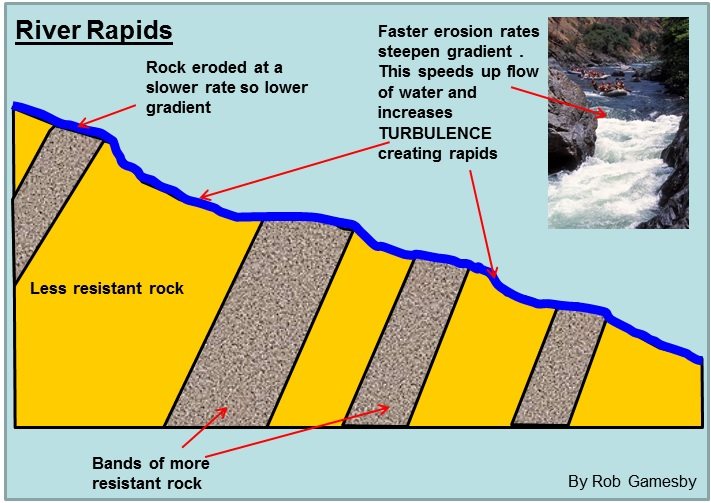
**1. Youth Stage**



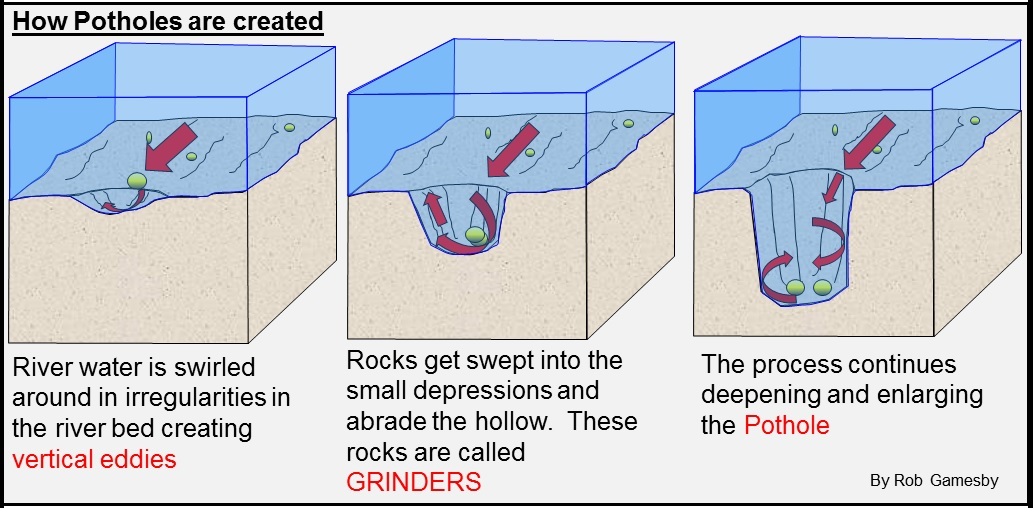
* Vertical erosion is the river’s main work at this stage.
* River cuts a deep **\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or** **canyon via hydraulic action and corrosion**

* As river moves downstream the banks are susceptible to freeze –thaw action.

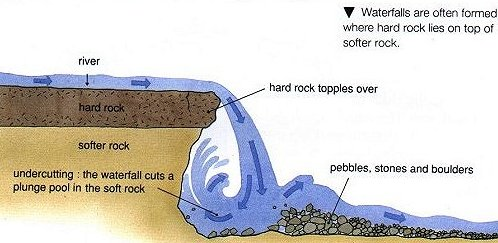


* **Rapids** are areas along the rivers course where water becomes more turbulent
* Created when the river flows over alternating bands of harder and softer rocks.



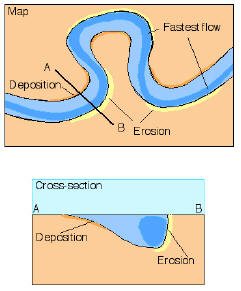
* Potholes are found along the river bed.
* Created via **abrasion.**

**Waterfalls**



**2. Mature Stage**

* Vertical erosion continues + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Velocity of flow slows and deposition of river sediment is common.
* Speed of river slows and can be used as a transportation route.



**Meanders:** river slows, lateral erosion begins to take place and river starts to wind.

* **Point of erosion: \_\_\_\_\_\_\_\_\_\_\_\_**
* **Point of deposition: \_\_\_\_\_\_\_\_\_**

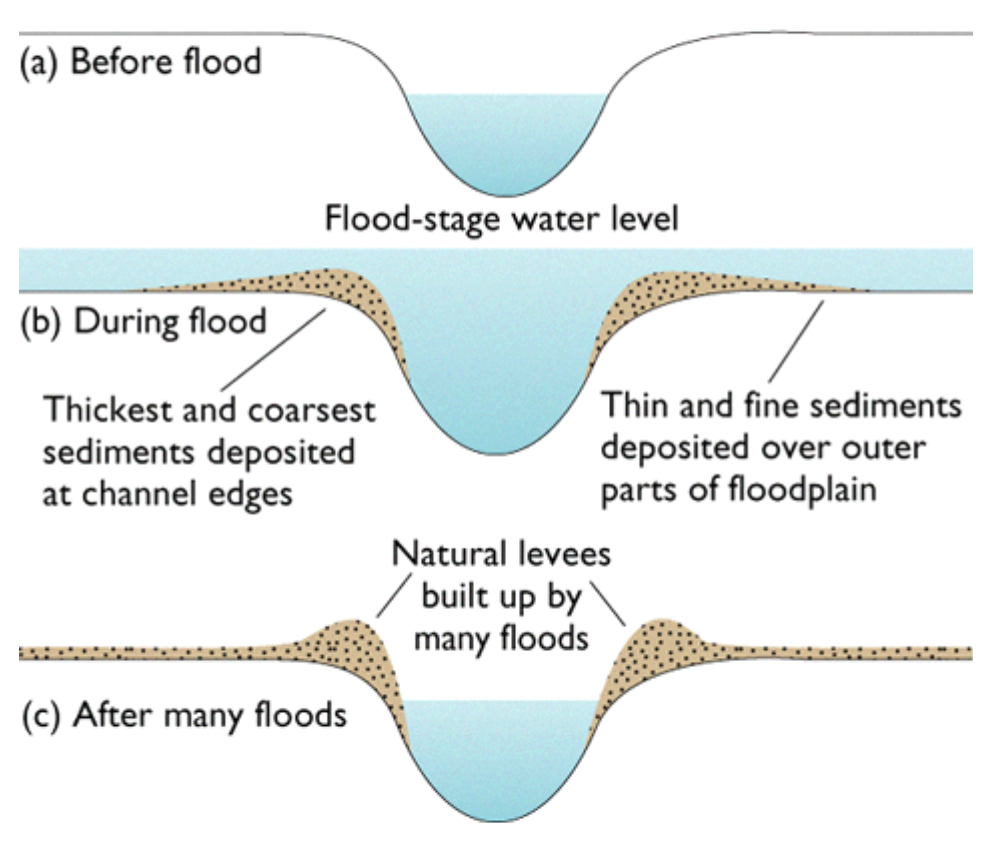
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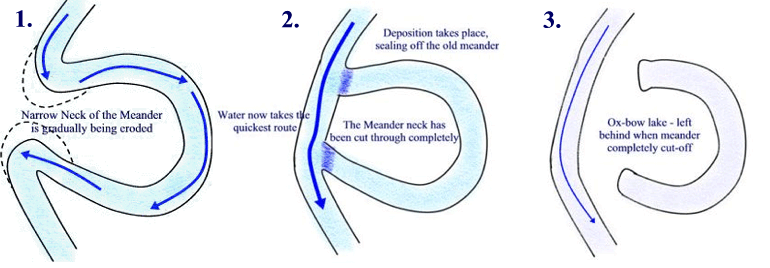
**3. Old Age Stage**

* Large, slow moving stream on flat land.
* Flood plain and meanders continue to widen.
* Slow moving river is forced to deposit its load. Usually along the flood plain 🡪 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Levees**

* As river overflows its banks, it deposits material **🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_** form along the banks.
* Flat flood plain ideal for farming but subject to flooding 🡪 artificial levees built to prevent flooding damage.

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**Meanders and Oxbow Lakes**

* As meanders widen the river can cut across meanders to create **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**