Using Messy Maps/Models in the Classroom

This is a fun, engaging, inclusive and creative way for pupils to demonstrate their understanding of the whole river system including the landforms/features and the processes of erosion, transportation and deposition. With upper KS2 pupils it could be also extended to engage pupils with understanding flooding and river/river basin management.

The success of the activity will depend on the bag of 'river ingredients', careful encouragement and intervention by the teacher as well as the pupils' prior knowledge and understanding of river landforms, processes and perhaps flooding and flood management.

In terms of the learning outcomes, they can be made as specific or as general as you want. It can be used as a plenary activity, main activity or a starter activity. If you want a quick learning activity, think Ready Steady Cook – this is Ready Steady Teach. The pupils have five minutes to create a model of a river to take to the Y4 class to teach them about rivers. Go! They create the model and have to explain what it shows and how they would use it. Conversely, it can be an in-depth topic including links to DT, science (materials), literacy (persuasive and report writing) and even drama (Mantle of the Expert).

What you need

1. Teach the pupils about rivers.

They will need to have lots of prior knowledge and understanding. The more the better, although it could also be used to find out what the pupils know already using the KWL strategy (What do the pupils KNOW, what do they WANT to know, and what have they LEARNT).

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2. A bag of 'river ingredients' (1 per group).

This should have a wide variety of different items to give opportunities for the pupils to make choices, connections and to make sense of their knowledge and understanding and express or demonstrate it in their model. It could include:

- Ribbon of various widths – blue preferably but maybe also brown to represent a river in flood full of suspended sediment, or in its lower course as it approaches the sea
- Pebbles – various sizes (from fist-sized to gravel) and textures (rough to smooth). Sand and silt (if you have a very good relationship with your cleaner). Hopefully the pupils will arrange them graded by size and smoothness along the river showing the effect of attrition. You could include some seashells for the estuary
- Egg boxes – these make good valleys and gorges
- Bubble wrap (could be a glacier)
- Cotton wool balls (could be the clouds, linking to the water cycle)

- Matchboxes or toy houses – pupils might arrange these near to the river where many settlements are sited but hopefully not on the floodplain (unless they build some flood defences)
- Pipe cleaners (these could be tributaries, distributaries in the delta or a waterfall)
- Blue crepe paper (to make a lake or a sea)
- Small branches/twigs (these could be trees to show afforestation of the catchment area to reduce flooding)
- Blocks of wood such as old Jenga blocks (these could be a dam to illustrate how the river is managed)
- A big lump of playdough (homemade is cheaper). This allows the pupils to make virtually anything; bridges, mountains, gorges or foundations for their woodlands that they have planted to increase evapotranspiration losses and so reduce flooding
- Junk modelling materials – bottles tops, plastic, corks – perhaps to make the link that pollution may be more present downstream of settlements
- Marker pens for annotations of things that cannot be created
- Big sheets of paper to make the messy model on – sugar paper or flip chart. If you are careful you can use these sheets to funnel the model materials back into the bags after the activity
- Anything else! I like to put some sachets of tomato or brown sauce (source) in there – some of the pupils get the joke (do you?) Some put the source in the wrong place!

What you do

Teach the pupils about rivers and give them the opportunity to research river landforms, processes and/or flooding.

In groups either simply challenge the pupils to make a model of a river to illustrate all the features/landforms and processes they have been learning about, OR be more specific and give them a purpose/objective specific to the pupils' local river or river basin.

For example, give them the scenario that their local river basin is prone to flooding. The Environment Agency has put out to tender the job of creating a management plan for the river basin. They are a team of River Management Experts (the pupils need to think of a name for their company) and need to produce a management plan to illustrate:

- The features of the river
- Its processes
- Why it might be vulnerable to flooding
- Their management strategy - what they would do about it?

The best presentation gets the job!

After making their messy maps/models each group needs to give a guided tour and present their plan. The other pupils can view and ask questions. Then maybe discuss and vote for the best and most effective model.

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