

## MIGRATION – Insects –

### Teachers Notes to accompany the pupil worksheet on INSECTS

#### Monarch Butterflies -

**Maths** – Pupils calculate speeds and understand units of speed

At 75Km/h and only flying for 10 hours a day, that equals **7.5km/hr** for the autumn migration speed.

**Science** – Pupils will see how and why environmental scientists record data and results using scientific diagrams, tables and scatter graphs,

Pupils will see that the speed increases they can suggest that it is possibly due to climate change(crisis)\* as the butterflies have further to go to get to Mexico because they now settle further north in Canada as it is getting warmer.

\*The phrase 'climate change' currently appears in numerous elements of the national curriculum. Teachers must determine whether this should be Climate Crisis

Pupils will see that the butterflies' migration speed has increased.

**Geography** - Degrees of Latitude are positions between North and South poles. This is explored further with a practical activity in the unit on Navigation.

The National Curriculum - identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night)

For the purposes of this exercise it will help if the children can see a map of North America/Mexico with latitude markings.

The angle between the North Pole and the Equator = 90degrees

The angle between the North and South pole = 180 degrees

**Science** - Plotting a line on a scatter graph may be something the teacher demonstrates. The teacher's demonstration may use any data as an example that shows how the line can predict what might occur in the future. The Covid 19 pandemic will provide many good example of how data and graphs predict trends.

The children should see that the line showing speed of butterfly migration rises steeply

Note - They may need to redraw the chart to see the line reach 2020 or just add an extra bit of paper on the side.

The children should see that this type of research gives early warning that these butterflies are an endangered species due to climate crisis and pesticide.

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### Globe Skimmer / Silk Worm

These are two insects that have found very different ways of getting around the world.

The globe skimmer flies and glides across oceans while the silk worm is kept by humans to manufacture goods.

The silk worm was smuggled out of China as silk is very valuable.

The silk worm is now farmed all over the world.

It is fed on leaves mostly from Mulberry trees.

You may want to show children a silk farm.



Other insects that are farmed and moved include honey bees and solitary bees. Solitary bees, like bumble bees are exported to the greenhouses in Europe for pollinating tomatoes.

### **What pushes and pulls migratory insects -**

There is no definite priority order for the list of 'push pull factors'. However the fact that something can 'glide or use the wind' is an evolutionary trait rather than a factor that pulls or pushes. Similarly insects do not want to pollinate flowers it is a result of their feeding habits and again is an evolutionary trait that means their food supply will flourish.

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### **Round up**

Children will see that

- insects Need to move freely to survive
- insects are an essential part of ecosystems
- Humans intervene as environmentalists and farmers
- There is value in working scientifically and that data over time can show us something we can't see.
- Migration is a good thing for eco systems and food chains in which humans are a part.
- It appears humans are making unintentional barriers through use of pesticides and climate change

### **Extension activity**

There are many fascinating insects –

The silk worm lends itself to further study

- Where did it start and how was it smuggled out of China?
- What does a silk farm look like?
- What is silk used to make?
- What other insects make threads?
- Can we eat silk worm?