MUKTANGAN UK SCHOOL PARTNERSHIP PROGRAMME

Teacher's handbook

Years 5 & 6

Registered charity: 1155393

Dear Teacher,

Thank you for downloading this handbook as part of the Muktangan school partnership programme!

About Muktangan

This pack was developed by the Muktangan UK Trust which was founded in 2011 to support the work of Muktangan, a charity providing high quality education to underprivileged children in Mumbai. Whilst education across India is characterised by high dropouts and poor learning, Muktangan provides children with a holistic, high quality education which allows them to thrive. Muktangan teachers are members of the local community and are trained in house, creating a truly sustainable educational model. The success of Mutkangan's innovative approach is shown as 100% of students passed their final grade examinations in 2014, 2015 and 2016!

About the Muktangan UK school partnership programme

We have developed this pack to raise awareness of Muktangan through learning here in the UK. We hope that it will enable children here in the UK to learn more about life and culture in India. We hope that whilst you use the resources in your teaching, your school will be inspired to support the pupils at Muktangan. We've developed an accompanying fundraising pack with ideas to get you started. Don't forget – this pack is for years five and six, but there are packs for other academic years on our website. www.muktanganeducationaltrust.co.uk

How to use this pack

This teacher's handbook will guide you through the resources and ideas that we have developed. They have been developed by teaching professionals in the UK and all the activities link directly to the curriculum. At the centre of the activities is the Khan family, who you will meet on the next page. This pack includes:

- This teacher's handbook which links together the curriculum and suggested activities
- Fundraising pack with ideas to get your school fundraising for underprivileged children in Mumbai

We hope you and your class enjoy learning more about life in Mumbai!

The Muktangan UK Trust

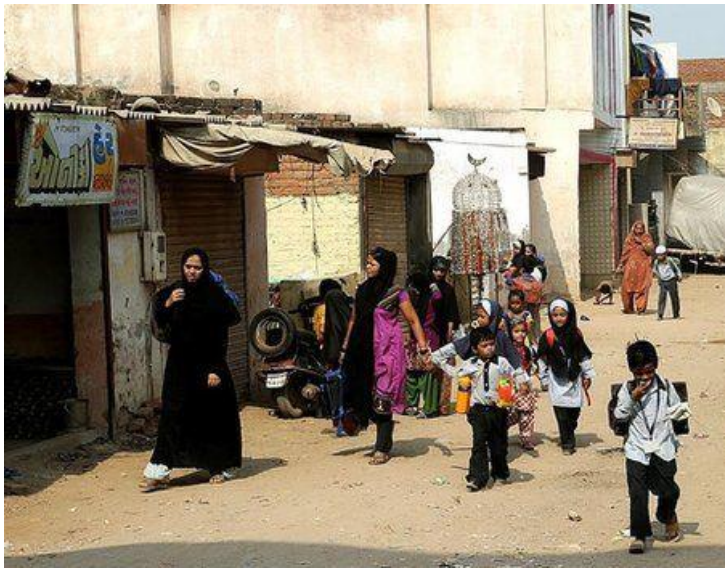
MEET THE KHAN FAMILY!

Dad, Latif, 35

Latif is the head of the Khan household. He is 35 and works on a construction site as a carpenter. In his spare time he makes beautiful wooden furniture to make some additional money.

Mum, Rabiya, 30

His wife, Rabiya, is 30. She is a housewife. She works hard to keep their living area clean and tidy. She has to fetch water in buckets from the tap every morning for the family to use for washing and cooking throughout the day. She cooks on a small gas ring in the corner of their home.



They both grew up in a small village in Uttar Pradesh, but there was not enough work there, so they moved to Mumbai to earn some money. They don't earn much, but still manage to send money back to their families in the village from time to time.

Many of the workers on Mumbai building sites come from other states. They and their families live on the construction site in temporary shelters.

The Khan family are Muslim. They pray regularly at home, and Latif goes to the mosque for Friday prayers.

Abdul, 11

Abdul is 11 years old. He loves animals. He has a pet dog called Bijan. He loves going to the zoo on special occasions. His favourite subject at school is science, especially biology, when he learns about the life cycles of different animals. He loves designing experiments.

Dina, 10

Dina is 10 years old. She loves reading books and writing stories. Her favourite stories are traditional Indian legends, like the ones in Tales of India, by Jamila Gavin. Her dad made her a puppet theatre for her birthday and sometimes she acts out the stories and legends she has written.

MATHS ACTIVITIES

National Curriculum subject content

☑ **Number – multiplication and division**

Year 5:

- recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Activity: house building (part 1)

Design a house for Latif to build!

Ask your class to design a house for a family in Mumbai to live in.

Create a scale drawing of the house plan and include measurements, multiplying and dividing by powers of 10 to show scale.

Teachers notes:

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National Curriculum subject content

☑ **Number - fractions**

Year 5:

- Compare and order fractions whose denominators are all multiplies of the same number
- Add and subtract fractions with the same denominators and denominators that are multiples of the same number
- Solve problems involving number up to three decimal places

Year 6:

- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 83]
- solve problems which require answers to be rounded to specified degrees of accuracy

Activity: house building (part 2)

Calculate the materials Latif needs to build his house!

Solve problems based on Latif's work as a carpenter. Work out the quantities of different materials that he will require to build his house, e.g. wood, metal and concrete.

You may take the house plans that your class have done for the previous activity, and think about the quantities of materials needed and the percentages of different types of material needed to construct the house.

Teachers notes:

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National Curriculum subject content

☑ **Statistics**

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables

Activity: Mumbai in numbers

Create an India fact file!

Ask students to create a fact file using data from the World Bank (http://data.worldbank.org). Students can search for data on India and compile a list of key statistics on development indicators such as life expectancy, access to water, electricity and education.

Top tip!

Link the development indicators into other areas of the curriculum as a starting point for investigations or interpretation work

Use the concept of representing the world as a village of 100 people to represent different data such as the percentage of India vs UK's population with access to services such as education, electricity, water, Internet, mobile phones.

We recommend using the book 'If the world were a village' by David J Smith alongside the NRICH maths activity (https://nrich.maths.org/7725) as a starting point.

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LITERACY LINKS: Use 'If the world were a village' by David J Smith to support this activity.

National Curriculum subject content

☑ **Measurement**

Year 5:

- Convert between different units of measure
- understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- Solve problems involving converting between units of time
- Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes

Year 6:

- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
- convert between miles and kilometres
- recognise that shapes with the same areas can have different perimeters and vice versa

Activity: global businesses

Help Latif take his furniture products around the globe!

Latif has been making beautiful Indian furniture for many years. A friend has suggested that he should consider exporting his products to sell in England. Ask your class to explore whether it would be feasible for Latif to sell his products abroad.

- Solve problems with units of time. How long will it take to fly products from Mumbai to London? What is the time different if Latif needs to talk to buyers in London?
- Solve problems using distance. How far will the products need to travel? Convert kilometres to metres and to miles.
- Work out the perimeter and area of Latif's furniture to calculate how much wrapping will be needed to transport his products. This could be simple shapes (e.g. a chest) or more difficult shapes (e.g. a chair)

SCIENCE ACTIVITIES

National Curriculum subject content

☑ Living things and their habitats

Year 5:

- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- describe the life process of reproduction in some plants and animals

Activity: life cycles

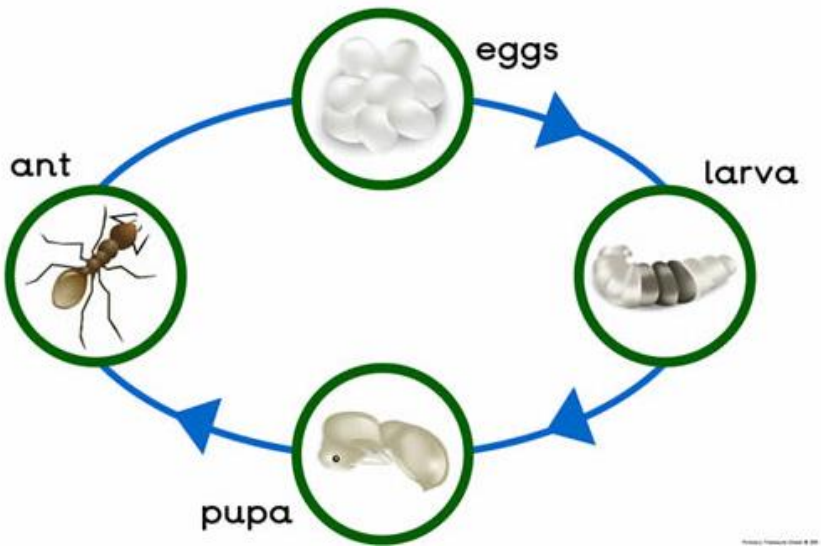
Help Abdul learn about life cycles!

Abdul loves animals and wants to be a zoo keeper when he grows up. He wants to learn about the types of animals he could keep in a zoo. He's got some ideas for interesting animals but would like to find out more about their life cycles.

Ask you class to create diagrams for the life cycles of:

- Elephant
- Rattle snake
- Ant
- Hawk
- Parrot
- Cow

You could also ask your class if these animals live in England, India or both!



LITERACY LINKS: Write a report to explain the animals and the differences between their life cycles.

National Curriculum subject content

☑ **Properties and changes of materials**
Year 5:

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Activity: using materials to solve problems

Help the Khan family build a monsoon proof roof!

Every year, Mumbai experiences a monsoon. Torrential rains flood the city. This is a big problem for families like the Khan family who live in temporary shelters. They need to make sure their roof is strong and waterproof to withstand the rains.

Use Practical Actions 'Monsoon Proof Roof' (http://practicalaction.org/upd8-monsoon-proof-roof) resources as a starting point to explore the question: what material should the Khan family use to build their roof?

Help Dina and Abdul tackle plastic pollution in Mumbai!

The communities of Mumbai face serious problems as the space to safely dispose of rubbish decreases. On their way to school, Dina and Abdul have to walk past one of the Mumbai dumps, which are huge piles of rubbish, mainly made up of plastic bags, plastic bottles and plastic containers. Dina wants to come up with a way to reuse the plastic.

Use Practical Actions 'Plastic Challenge' (http://practicalaction.org/plastics-challenge) to teach your class about different types of plastics, how they are used, how long they take to decompose, and how they could be reused.

LITERACY LINKS: Hold a debate: 'This house believes that all plastics should be banned', with two teams arguing for and against.

National Curriculum subject content

☑ **Light**

Year 6:

- recognise that light appears to travel in straight lines
- use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Activity: experimenting with light

Put on a puppet show with Dina!

Recreate some of Dina's favourite Indian myths and stories and create shadow puppets to experiment with light. Investigate the effects as you move the puppet nearer to and further away from the light source. Experiment with different materials, for example translucent, opaque and transparent materials.

LITERACY LINKS: Tell traditional Muslim stories (also a link to Religious Education!).
Write a play script of the play to perform using shadow puppets.

GEOGRAPHY ACTIVITIES

National Curriculum subject content

☑ Locational Knowledge

- 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)

☑ Geographical skills and fieldwork

- use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world
- use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied

☑ Human and physical geography

- describe and understand key aspects of:
- physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle
- human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water

Activity: Latif and Rabia's village

Latif and Rabia were born in a village called Barhan in Uttar Pradesh. Latif and Rabia earn more money from their jobs in Mumbai than they would in the village. Their parents still live in the village and they send money to them from time to time. Latif intends to visit his parents but it is a long journey. Help Latif plan his journey back to the Barhan village:

- Create maps of India, considering where it is in relation to the equator, Tropic of Cancer, Tropic of Capricorn and which hemisphere it is in.
- Create more localised maps of Mumbai and Barhan, which is near Agra. Use grid references and compass points to describe the best route between Mumbai and Barhan.
- Explore the differences between an Indian village and Mumbai in terms of types of settlement, the physical environment and natural resources.

Activity: What's the weather like in India?

Where should the Khan family go on holiday?

The Khan family would like to go on holiday somewhere in India next February. They aren't sure where to go, because the weather in India varies in different parts of the country.

Think about the location of India on the world map in relation to the equator. What effect does this have on the weather in India?

Look at different climate zones in India and the UK. How are they different?

Compare the different areas of India – the Northern mountainous, temperate regions (Himalayas) and the tropical South.

ART ACTIVITIES

National Curriculum subject content

Pupils should be taught to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design. Pupils should be taught:

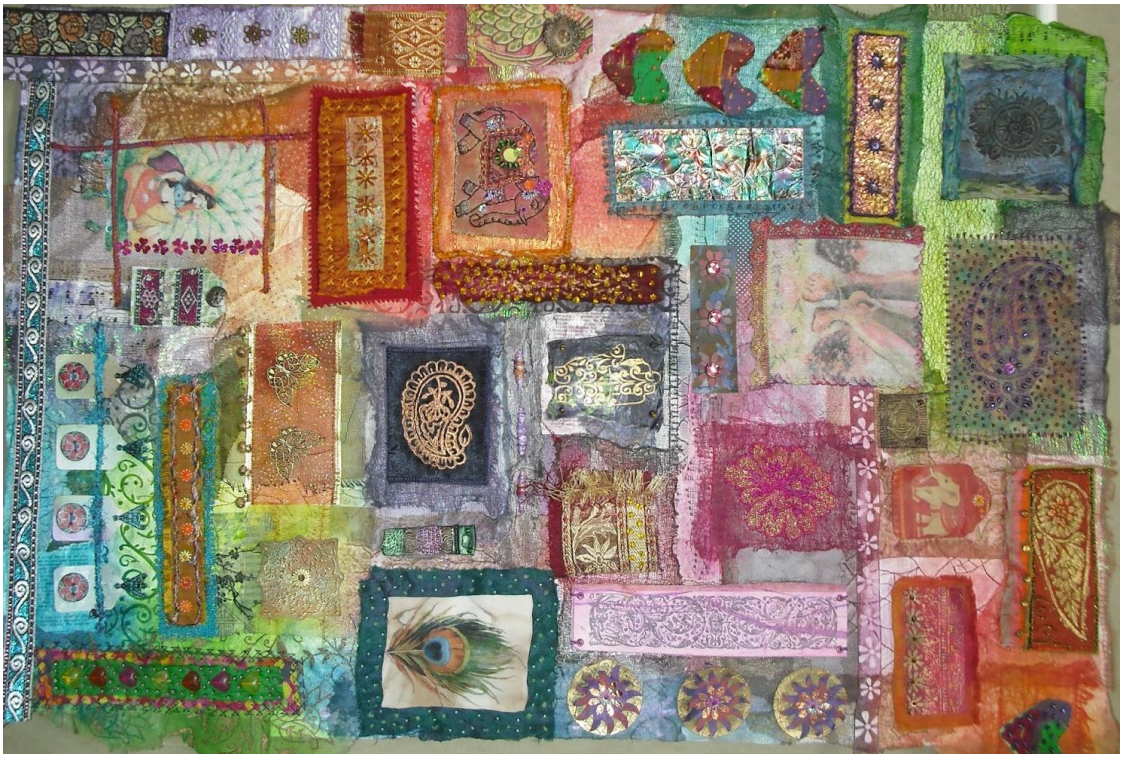
- to create sketch books to record their observations and use them to review and revisit ideas
- to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]
- about great artists, architects and designers in history.

Collage: create an Indian wall-hanging

Create a class wall hanging worthy of hanging in the Khan household! Each child should create their own square of fabric, decorated in Indian style.

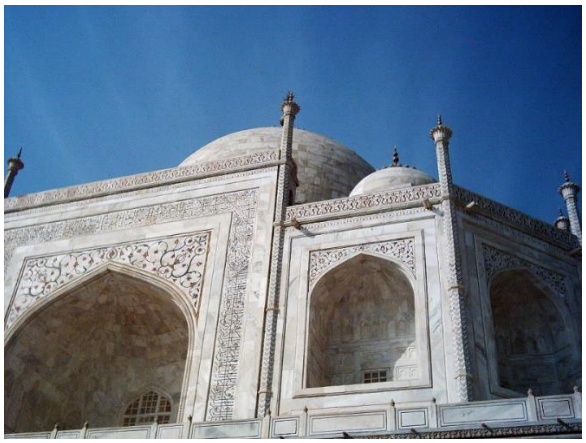
Experiment with symmetry and pattern and mix different textiles (rough and smooth, plain and patterned). You can take inspiration from Indian Rangoli patterns, the use of the tear drop in Indian design and the use of flowers.

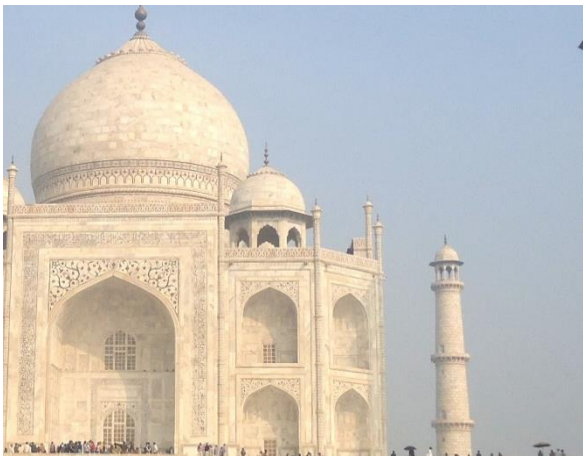
Stick all the squares together to create a beautiful wall hanging!



Drawing: The Taj Mahal

Barhan, the village where Latif and Rabia were born, is really near to Agra, where the Taj Mahal is. They once went to visit. Your class should draw the Taj Mahal in different light, experimenting with shadows, direction of sunlight and reflections. Use a variety of techniques, such as cross hatching. Explore shadows, shades, tone and highlights.



LITERACY LINKS: Write a newspaper article describing the building of the Taj Mahal and explaining why it was built in 1632. This is a great love story!

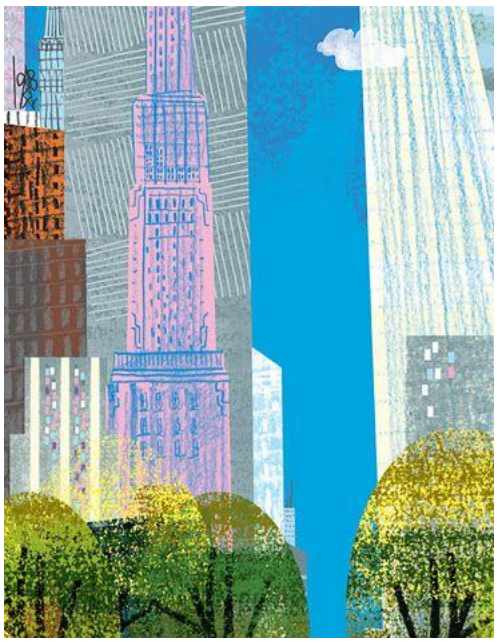
Painting: pen and ink drawings with colour wash

Abdul loves animals! Create some pen and ink drawings of Indian animals and use a colour wash to bring it to life.

First colour wash your background by using watercolour paint. Think about the use of colour in your planned design. What colour should it be? When your background is dry, draw your design over the top of the watercolour background.

Print: Mumbai city scapes

Create Mumbai city scapes using different materials to make printing blocks. Cut and carve polystyrene, card, cork or linoleum to make blocks. Paint your blocks and stamp your paper, pressing down firmly.



Textiles: create a flag

Mumbai needs an official flag! Ask your class to create Mumbai mood boards to bring together the Mumbai theme. They might like to think about food, culture and also take inspiration from Indian textiles. Use the mood boards as inspiration for their Mumbai flag!

LITERACY LINKS: Write an explanation for why they have chosen their flag design.

Digital media: Indian street art

Explore the modern side of Indian art – Mumbai street art. Ask your students to create a short presentation using either Microsoft Powerpoint or Presi. They should include digital photos and video exploring Mumbai street art.

Your class should then work in teams to produce their own giant street art image. Stick large pieces of paper on the wall and get painting! Your class should take inspiration from techniques and styles of the street artists they have studied.