Bee-Bot Maths Activity Ideas

Teaching 'Number' with Number Line Mats (1)

The TTS Number Line Mat is a versatile accessory that can be used to teach a range of different number principles.

SKILLS AND LEARNING: Counting on forwards and backwards in steps

Program Bee-Bot to move a forward or backward sequence up to 20 steps. Ask children to read out the number Bee-Bot lands on.

Can the children program Bee-Bot to land on different numbers from 0 to 20?

SKILLS AND LEARNING: Counting on forwards and backwards in steps of 2, 3 and 5.

Program Bee-Bot to move in set step sequences, e.g. program Bee-Bot to move two steps, then pause, then another two steps and pause. Count the numbers with Bee-Bot (2, 4, 6 etc).

What do they notice about the numbers? Can they do it backwards?
Can the children predict the number pattern if programming Bee-Bot to move in steps of 2, 5, and so on?

SKILLS AND LEARNING: Identify one more and one less than a given number.

Ask children to program Bee-Bot to move to a given number from zero. Then program Bee-Bot to move one step back, record the number sentence (e.g. 9 is one less than 10), Program Bee-Bot to move one step forward from 9 (e.g. 10 is one more than 9) etc.

Children continue to explore moving Bee-Bot forwards and backwards from a number in steps of one.

SKILLS AND LEARNING: Represent and use number bonds and related subtraction facts within 20.

Explore number bonds by programming Bee-Bot to move from zero to a given number (e.g. 6).

How many more steps to get to 10 or 20.?

Then, ask the children to record on whiteboard/paper, e.g. 6 and 4 makes 10, and so on.

Bee-Bot Maths Activity Ideas

Teaching 'Number' with Number Line Mats (2)

The TTS Number Line Mat is a versatile accessory that can be used to teach a range of different number principles.

SKILLS AND LEARNING: Inverse Operations

Explore inverse operations for subtraction and addition. For example, calculate 5 + 4 by starting Bee-Bot on the number 5 and program Bee-Bot to move 4 steps forward. What number does Bee-Bot end up on? Children then record the number sentence, e.g. 5 + 4 = 9. What will happen if Bee-Bot is programmed to move 4 steps backwards? We end up back where we started. Therefore, 9 – 4 is = 5. Continue with different calculations. Can the children predict what number Bee-Bot will end up on, before pressing the 'Go' button?

SKILLS AND LEARNING: Recall and use addition and subtraction facts to 20

For subtraction and addition, place Bee-Bot on the starting number on the number line mat. For example, for the subtraction calculation 15 – 5, children would place Bee-Bot on number 15 on the number line then program Bee-Bot to move backwards 5 steps. What number does he land on? Children can then record the number sentence, 15 – 5 = 10 and so on.

For addition calculations, program Bee-Bot to move forwards to add on a number. For example, for the calculation 4 + 3, place Bee-Bot on the number 4 and program it to move 3 steps forwards. Then, record the number sentence, 4 + 3 = 7. Explore swapping the starting number. For example, for the calculation 4 + 3, say 'if I start on 3 and program Bee-Bot to move 4 steps forward, what number do I end up on?'. Then, 'If I start on 4 and program Bee-Bot to move 3 steps forward, what number do I end up on? Why is it the same?'

Teaching 'Number' with Personalised Mats and Grids

Personalise learning with the TTS Pocket Mat and the TTS Tear of Pad by deciding what goes on the mats/grids to meet the needs of pupils.

SKILLS AND LEARNING: Identify and represent numbers using objects and pictorial representations.

Insert or draw different pictures that represent numbers in a different way. Can the children program Bee-Bot to visit all the pictures that represent the number 4, 6, 8, and so on?

SKILLS AND LEARNING: Recognise, find, name and write fractions

Insert or write different representations of fractions (e.g. for half, write it as a number, show it as half a shape shaded, as two out of four number blocks highlighted etc). Can the children program Bee-Bot to land on a square that shows half? Can they now program Bee-Bot to land on another square that shows half? And so on. Can they program Bee-Bot to land and pause on all squares that show half?

Additionally, ask children to program Bee-Bot to move to different places on the mat/grid. What fraction has Bee-Bot landed on?

SKILLS AND LEARNING: Recognise odd and even numbers

Insert or draw a mix of odd and even numbers. Ask children to program Bee-Bot to land on an odd number. Now can they program Bee-Bot to move to another odd number? Now can they program Bee-Bot to move to an even number? Record where the children land their Bee-Bots under an 'Odd' and 'Even' heading. Can they program Bee-Bot to visit all the odd or even numbers and pause on each one?

SKILLS AND LEARNING: Recall multiplication facts for the 2, 5 and 10 multiplication tables

Insert or write a mix of numbers – include some multiples of 2, 5 or 10, and some that are not. Can the children program Bee-Bot to land on multiples of 2, 5 and 10 etc? Can they program Bee-Bot to visit each multiple of 2 etc and pause on each multiple?

Teaching 'Money' with the Coin Mat

Learn the value of different coins and how to solve money problems with the TTS Coin Mat

SKILLS AND LEARNING: Recognise and know the value of different denominations of coins and notes

Ask children to program Bee-Bot to reach different coins.

Can they program Bee-Bot to visit all the coins with the same value on the mat and pause on each one?

SKILLS AND LEARNING: Solve problems involving money

Program Bee-Bot to solve money problems. For example, Maisie buys a bag of apples for £1.50. She pays for the apples with a £2 coin. How much change will Maisie get? Ask children to program Bee-Bot to land on the answer.

SKILLS AND LEARNING: Adding money

Can the children create a route for Bee-Bot that adds up to set amounts? For example, program a route for Bee-Bot that adds up to £2. Can they now program another route for Bee-Bot that also adds up to £2? Repeat with different amounts.

SKILLS AND LEARNING: Adding money

Ask children to program Bee-Bot to move a set route around the mat. What do all the coins on the route add up to?

Teaching 'Measurement' with Personalised Mats and Grids

Personalise learning with the TTS Pocket Mat and the TTS Tear Off Pad by deciding what goes on the mats/grids to meet the needs of pupils.

SKILLS AND LEARNING: Compare, describe and solve practical problems involving lengths and heights, mass/weight, capacity and volume.

Insert or write different units of measurements. Ask children to program Bee-Bot to move to a unit of measurement that measures length. Now can they move to a unit of measurement that measures mass, and so on?.

SKILLS AND LEARNING: Compare, describe and solve practical problems involving lengths and heights, mass/weight, capacity and volume.

Insert or draw different pictures of objects – such as items that are shorter and longer (e.g. giraffes, monkeys, trees, flowers), lighter and heavier (e.g. elephants, feathers, apples) etc. Ask children to program Bee-Bot to move to one of the objects. Can they now program Bee-Bot to move to an object on the mat that is longer/heavier than the item Bee-Bot is on, and so on?

*SKILLS AND LEARNING: Read analogue time.*

- Insert or draw different clock faces showing different times. Read out a time on the mat. Can the children program Bee-Bot to move to the correct time? Repeat for other times shown on the mat.

- Ask the children to program Bee-Bot to move to a given time on the mat. Can they now program Bee-Bot to move to a clock face that is one hour earlier/later than the time that Bee-Bot is currently on etc?

- Ask the children to program Bee-Bot to a time that shows when school starts, when lunchtime is, bedtime is and so on.

Teaching 'Shape' with the Shape Mats and Pen Holders

Use the TTS Shapes, Colour and Size Mat and TTS 3D Shapes Mat to explore properties of shapes.
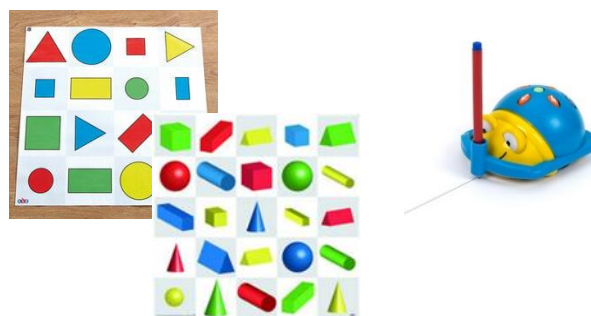
SKILLS AND LEARNING: recognise and name common 2-D and 3-D shapes

Say a shape name, e.g. 'circle'. Can the children program Bee-Bot to move to a square with that shape in it? Repeat for other shapes.

SKILLS AND LEARNING: identify and describe the properties of 3-D shapes

Can the children program Bee-Bot to move to a shape that has certain properties? For example, six sides, one vertex, three faces etc.

Ask children to program Bee-Bot to move to a shape that has a certain property, e.g. 'program Bee-Bot to move to a shape that has 12 sides' etc.

SKILLS AND LEARNING: Draw lines and shapes using a straight edge

Can the children program Bee-Bot to draw different shapes, such as a square or circle? What shapes can't they draw with Bee-Bot? Why?

Can the children program Bee-Bot to draw straight lines of varying lengths?

**SKILLS AND LEARNING: recognise and name common 2-D and 3-D shapes**

Ask children to program Bee-Bot to move to specific squares. What shape has Bee-Bot landed on? Tell me a property of that shape.

Bee-Bot Maths Activity Ideas

Teaching 'Position and Direction' with Mats, Obstacle Courses and Mazes

Position and Direction can be explored with a wide range of TTS Mats, as well as the Obstacle Course and Changeable Maze.
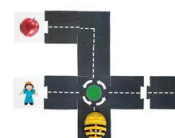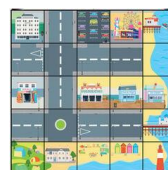
SKILLS AND LEARNING: Describe position, direction and movement, including whole, half, quarter and three-quarter turns

Can the children program Bee-Bot to make a quarter turn? A half turn? A whole turn?

Can they program Bee-Bot to turn 90 degrees?

Can they program Bee-Bot to turn clockwise and anticlockwise?

SKILLS AND LEARNING: Describe position, direction and movement, including whole, half, quarter and three-quarter turns

Can the children program Bee-Bot to get through a maze or complete an obstacle course that involves right angles?

Ask children to take it in turns to instruct another child how to program Bee-Bot to get through the maze or obstacle course.

SKILLS AND LEARNING: Describe position, direction and movement, including whole, half, quarter and three-quarter turns

Use different themed Bee-Bot mats and ask children to plan out different journeys for Bee-Bot. Ask them to record the algorithm then program Bee-Bot to execute the steps to complete the journey.

Bee-Bot English Activity Ideas

Teaching 'Phonics and Spelling' with the Alphabet Mat and Blank Grid Mats

Teach children how to practise sounds and letters with the TTS Alphabet Mat and TTS Tear Off Pad.

SKILLS AND LEARNING: *Know the sounds for graphemes, including alternative sounds*

Ask children to program Bee-Bot to land on different letters on the Alphabet Mat. Can the children say the letter name and the sound?

How many words can the children think of that begin with that letter?

SKILLS AND LEARNING: *Know the sounds for graphemes, including alternative sounds*

Write the sounds you would like children to focus on, on the Tear Off Pad. Say a sound. Can the children program Bee-Bot to reach the sound on the mat?

Can the children program Bee-Bot to reach all the digraphs and trigraphs that sound the same but are spelt differently?

SKILLS AND LEARNING: *Spell familiar and unfamiliar words, using phonetic knowledge*

Can the children program Bee-Bot to spell out their name on the Alphabet Mat?

Read out words that you would like the children to be able to spell, such as the days of the week. Can they program Bee-Bot to spell the word? Ask children to program Bee-Bot to pause on each letter in the word.

SKILLS AND LEARNING: *Spell familiar and unfamiliar words, using phonetic knowledge*

Write words that you would like the children to focus on, on the Tear Off Pad. Can the children program Bee-Bot to create a short sentence? The children can program a pause between each word to act as a space. Ask the children to work in pairs taking it in turns to program Bee-Bot and work out what sentence Bee-Bot is writing.

Children can record the words on whiteboards. Does the sentence make sense?

Bee-Bot English Activity Ideas

Teaching 'Reading and Writing' with Role Play Mats and Activity Tins

Get creative with our range of TTS Mats and Activity Tins to develop reading for pleasure and understanding, and to stimulate writing with fun Bee-Bot roleplay.

SKILLS AND LEARNING: Re-telling familiar stories

- Choose from a wide range of mats, or create your own, to set the scene for a familiar story, such as 'The Three Little Pigs'. Get the children to create their own character jackets, using our template and use the voice recordings feature on Bee-Bot to record audio for the characters. Can the children program Bee-Bots to re-tell the stories as a group?

- Children can also tell stories using the Activity Tins. Can they make up their own stories? Can they use the TTS Pushers to program Bee-Bot to move different characters around to help tell their stories?

- Use the TTS Trailer to add an extra element to story- telling, such as using it to deliver letters to characters in 'The Jolly Postman Story' or fruit in 'Handa's Surprise'.

SKILLS AND LEARNING: Creating and writing stories

Either using the Mats or Activity Tins, ask the children to program Bee-Bot so that he goes on a journey. He could visit different shops on the Town Mat, have a day out on the Seaside Mat or go on a dinosaur seeking adventure on the Dinosaur Mat. The children can then video Bee-Bot, as he executes the program.

Challenge children to use the video to help them write all about Bee-Bot's adventures.

Bee-Bot Science Activity Ideas

Teaching about Animals and Plants with the Science Themed Mats

Bring Bee-Bot into Science, using our engaging Science themed mats to encourage discussion and scientific thinking.

SKILLS AND LEARNING: Living things and their habitats.

Insert photographs of different habitats into the Transparent Grid Mat. Can the children program Bee-Bot to pause at different habitats? What creatures live there? Why would they choose to live there?

Create a food chain or classification key. Can the children program Bee-Bot to follow the food chain for different animals? Or identify different animals by following the classification keys?

SKILLS AND LEARNING: Seasons and plant identification.

Program Bee-Bot to help children to identify different trees and plants, and to learn about the seasons on the Tree Mat.

Can the children recognise the plants etc on the mat? Say a tree or plant name. Can the children program Bee-Bot to reach the correct tree/plant?

Can the children program Bee-Bot so that it goes on an Autumn route? (i.e. pauses on squares with pictures showing signs of Autumn). Repeat for different seasons.

SKILLS AND LEARNING: Living things and their habitats.

Program Bee-Bot on the Woodland Animal Mat and Minibeasts Mat to help children identify and categorise different animals.

Name an animal. Can the children program Bee-Bot to move to the named animal? What can they tell you about the animal? Can the children program Bee-Bot so that he lands on a mammal? Now can they program Bee-Bot so he lands on a reptile? Can they program Bee-Bot so he lands on a herbivore? And so on.

Teaching about the Human Body and Forces with Bee-Bot

Bring Bee-Bot into Science, using our engaging Science themed mats to encourage discussion and scientific thinking.
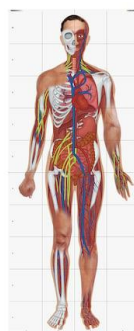
SKILLS AND LEARNING: *Identify parts of the human body and understand how they function.*

Program Bee-Bot to navigate the different parts of the human body on the Human Body Mat, identifying and understanding the different functions of each part of the body.

Name different body parts. Do the children know where they are? Can they program Bee-Bot to reach the body part?

Can the children program Bee-Bot to show how blood is pumped around the human body?

SKILLS AND LEARNING: *The effect of force on objects and friction in push and pull interactions.*

Explore forces with Bee-Bot by seeing how much he can push and pull.

Predict how much weight Bee-Bot will be able to pull using the TTS Trailer. Place one weight in at a time and program Bee-Bot to move a short sequence after placing in each weight. How does Bee-Bot move when the trailer is light? How does Bee-Bot move when the trailer is heavy? What happens when the trailer is too heavy? Why?

Choose weighted objects for Bee-Bot to push when wearing a TTS Pusher. Predict how many objects it will be able to push. What happens when there are too many objects for Bee-Bot to push? Why? Experiment with very light objects, such as feathers. Is Bee-Bot able to push these? Discuss the effects of external forces such as air resistance causing drag.

Teaching Key Geography Skills with our Map Mats.

Program Bee-Bot to take journeys across the world and in your local area to make learning key geography skills fun and interactive.
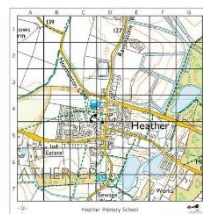
SKILLS AND LEARNING: Name and locate the World's countries, seven continents and five oceans

Program Bee-Bot to explore different parts of the world, using the TTS World Map and TTS European Map.

Can the children program Bee-Bot to travel from the UK to another country that they're studying? What countries, seas etc does Bee-Bot travel through to get there?

Can the children program Bee-Bot to go on a voyage across all five oceans or to visit all seven continents?

SKILLS AND LEARNING: Name, locate and identify characteristics of the four countries and capital cities of the United Kingdom and its surrounding seas.

Program Bee-Bot to explore the TTS UK Map.

Ask children to program Bee-Bot to visit each country in turn. Do they know where Scotland is? Can they program Bee-Bot to get there?

Can they program Bee-Bot to visit all four capital cities?

Can they program Bee-Bot to visit different parts of the UK starting from where they live?

Practise compass directions by asking the children to program Bee-Bot to move North, South, East or West from different locations. Discuss where places are in relation to one another, e.g. 'Glasgow is to the west of Edinburgh'.

Bee-Bot Geography Activity Ideas

Teaching direction and vocabulary with Bee-Bot accessories

Use role play props and mats to make learning directional language fun and interactive.

SKILLS AND LEARNING: Use simple compass directions and plan a map of the local area.

Use the TTS Busy Street Building Fronts or TTS Local Area Pack to create a map of the local area. Organise children into small groups. Ask them to plan different routes for Bee-Bot, moving from one feature to another. Use the Bee-Bot Compasses to find out which way is north, south, east and west. Then, get the children to program Bee-Bot using compass directions (e.g. To get from the park to the post-office, program Bee-Bot to move two steps north, then move three steps east and so on). Children could either write down the instructions or take it in turns to say the instructions for another child to follow.

Skills and Learning: Use aerial photographs and plan perspectives to recognise landmarks and basic human and physical features.

Program Bee-Bot to explore your local area, using the TTS School and Ordnance Survey Maps.

- Can the children program Bee-Bot to land on a location with human/physical features? What are they?
- Ask children to find different landmarks on the map. Can they program Bee-Bot to reach there?
- Can they program Bee-Bot to follow their route to school on the map?
- Can the children instruct one another to program Bee-Bot to follow a route using compass directions?

Bee-Bot PSHE Activity Ideas

Teaching about emotions and the community with Bee-Bot accessories

Program Bee-Bot to explore emotions and people in the community.

PSHE: People in the community

Insert photographs of different people from the community who do different jobs into the Transparent Grid Mat. Ask the children to program Bee-Bot with a set of instructions that will get Bee-Bot to a particular square/photograph. What does that person do? How do they help us? Can they program Bee-Bot to move to another person that the person might work with? How do they work together?

PSHE: Understand Feelings and Emotions

Ask children to program Bee-Bot to land on different squares showing people with different feelings on the Feelings and Emotions Mat. Discuss what emotions are being shown.

Read out short scenarios where people might experience different emotions (e.g. 'Evie was having a lovely time at the park when she suddenly fell over and hurt her knee') and ask children to program Bee-Bot to the person on the mat that matches what emotion they think the person in the scenario will be feeling. Children might wish to program Bee-Bot to visit more than one emotion if they think that the person might have mixed emotions about an event etc.

PSHE: People in the community

This Activity Tin comes with activity cards with lots of ideas for using Bee-Bot to learn about the people who help us. Place the people on a busy street mat or create a map of your local area, marking on the local doctor's surgery, fire station etc. Discuss what the buildings are and who works there. Use the people from the tin to role play scenes of when somebody might need help from the people who help us.

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Bee-Bot Languages Activity Ideas

Teaching Modern Foreign Languages with the Bee-Bot mats

Learn foreign vocabulary with Bee-Bot in a fun and interactive way.

SKILLS AND LEARNING: Broaden vocabulary, understand new words and describe people and places.

Explore a continental town, using the French Town Mat, and practise pronouncing the names of various locations.

Make voice recordings in French on Bee-Bot, such as directional language and a greeting for when Bee-Bot interacts with another Bee-Bot.

Say the French word for one of the shops. Can the children program Bee-Bot to the correct shop?

Give out directions in French to a location on the mat. Can the children follow the instructions and program Bee-Bot to arrive at the correct destination?

The above activities can be done for any language. Why not make your own foreign town mat?

SKILLS AND LEARNING: Broaden vocabulary, understand new words and describe people, places, things and actions.

Write different words in a foreign language on the TTS Tear Off Pad. Say one of the words on the mat in English. Can the children program Bee-Bot to land on the same word in a foreign language on the mat? Repeat with other words. Then, play the other way around by writing words in English on the mat. Say one of the words in a foreign language. Can the children program Bee Bot to land on the same word in English on the mat?

Write foreign words on the mat. Can the children program Bee-Bot to create a short sentence in a foreign language by pausing at each word in order on the mat?

Insert pictures of people/places/everyday objects etc, using the Transparent Grid Mat. Say the word in a foreign language or say a short sentence describing the picture. Can the children program Bee-Bot to arrive at the correct picture?

Bee-Bot Music Activity Ideas

Teaching Listening and Performing with Bee-Bot.

Get creative and use Bee-Bot in music lessons to create your very own dance show by programming Bee-Bot to move to different music genres.

Line Dancing Bee-Bots

SKILLS AND LEARNING: listen with concentration and understanding to a range of high-quality live and recorded music.

- Bee-Bot has a memory of up to 200 steps and is perfect for coding to create dance routines that can be shared for other groups to follow and learn the dances.
- Begin by listening to short extracts of a variety of different music styles. Challenge the children to create a short dance sequence to go with the music. You may wish to watch some video tutorials and learn some well-known dance routines for inspiration.
- Encourage the pupils to break down the dances into stages and to plan the dance routines using algorithms.
- Allow the children time to experiment programming Bee-Bot to create the dances, adapt the dances and change any errors.
- Challenge children to use more than one robot and create group synchronised dances.
- Perform the dances using a range of movement patterns.
- Groups can give other groups the instructions to program the robot to perform their dance.
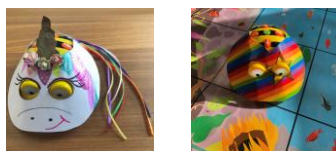
Bee-Bot Art & Design Activity Ideas

Teaching Creative Skills with Bee-Bot Accessories.

Get creative and make wonderful pieces of art with Bee-Bot.

Personalise learning with homemade Bee-Bot jackets and decorated trailers.

SKILL: Design Bee-Bot Jackets.

Design a Bee-Bot jacket using our template or create your own.

Make book characters to help retell a familiar story. For example, create Dwarf themed jackets, a Snow White, Prince and Wicked Stepmother jacket to retell a well-known fairy tale. Or why not create a Theseus themed jacket for Bee-Bot and get children to create a maze for 'Theseus' to find and kill the Minotaur then escape? Perhaps another Bee-Bot could be dressed as the Minotaur? The possibilities are endless!

Make themed characters for special events and celebrations. For example, create Easter Bunny jackets then program Bee-Bot to go on an Easter egg hunt. Bee-Bot could collect eggs in its specially designed trailer.

Make dance outfits for Bee-Bot and use in a dance performance (see 'Music Activity Ideas' above).

SKILL: Draw patterns, lines and shapes to create unique pieces of art.

Program Bee-Bot to draw lines and to create different patterns and shapes, using the Pen Pusher. Use different coloured pens to make a beautiful work of art.

Skill: Decorate a Bee-Bot Trailer

Have fun and get creative decorating a Bee-Bot Trailer.

Make Bee-Bot a Santa jacket and decorate the trailer as his sleigh. Use a busy street mat or create your own. Fill the trailer (Santa's sleigh) with presents and create an algorithm to program Santa Bee-Bot to deliver all the presents to the different houses.

Turn the trailer into a carnival float and program Bee-Bot to follow a route around a town.

Let your imagination run wild.