

Professional Development Session for Mosta Primary A educators A Multidisciplinary Approach – STEM & Literacy activities through stories

Mary Rose Cordina - Maria Regina College E.O. Curriculum

1st April 2022

Maria Regina College: Our Plan and Vision about STEM



At Maria Regina College we believe in a cross-curricular approach, where teachers plan more effective means of teaching by associating subjects and activities in the curriculum with other subjects and link these to real life situations. Such activities allow for investigations that engage children's imagination and keep children focused and engaged.

Once a month, the Head of College Network (HCN), Mr Patrick Decelis, meets with all Heads of school during a Council of Heads and together we discuss the College Vision and the way forward. Heads share their views and ideas, and these will then be reflected in the College Plan. STEM is one of the priorities for this year.

Also, once a term, HCN together with EO Curriculum and the Maths and Science Support Team within the college, meet with the Maths and Science Link persons from each school so that together we will share the good practices being carried out in schools and discuss the challenges encountered.

A Multidisciplinary Approach – STEM and Literacy activities through stories

Professional Development Session for Mosta A Primary educators.

On 1st April, a professional development session was organised for all staff members. The session kicked off by the explanation of what STEM is and discussed its benefits. Educators were shown how various activities can be developed from a story. Different materials and resources were introduced to enrich the learning experiences. Examples showcased how STEM could be enhanced through play and different experiments. All experiments:

- were relevant to pupils' age
- were hands on and engaging
- stimulate the children's curiosity towards learning
- included reasoning, prediction, recording of results and interpretation

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Feedback from Educators about Session

Educators passed on positive feedback with regards to both the presentation of the topic as well as its content. They enjoyed the session and became more aware of the benefits of STEM. Below are some of the participants' comments.

The STEM cope session was very interesting and Ms Cordina gave us a lot of ideas that can be used in the classroom. As a K&E I would greatly benefit if we had more training sessions to keep on learning and implementing such activities in class. One of the STEM activities we did in class and was very popular with the children was milk painting. It was very easy to implement but magic for the children. Apart from the experiment we did milk painting on the paper so the children could keep a keepsake of the activity and remember skills achieved.

I would like to say thank you for the very interesting cope session regarding STEM. From this session I gained a lot of information to help me implement more my work in the classroom. The previous week I had already carried out the 'skittles' experiment as we were discussing rainbows in our topic. Therefore after the seeing the cope session, the next day I also carried out the 'colour changing milk' experiment to continue implementing about the colours.

I enjoyed the STEM cope session as Ms Cordina explained in an easy yet detailed manner how to promote this innovative way of teaching strategies and methods in the classroom. STEM promotes exploring, testing, observing and most importantly is doing, be active participants in the classroom rather than sitting down to the old Socratic role learning and teaching. Ms Cordina explained to us how this gives life to the classroom and brings an element of creativity, she continued by sharing with us how STEM experience can clearly do wonders for social skills and life skills in general too. We also discussed how to incorporate engaging STEM activities for our children that will foster curiosity although they are very young. What I found striking is how open minded Ms Cordina is by also promoting gender equality and discrimination in class and the importance of empowering children to realise that all have equal opportunities.

The stem cope session by Mrs. Cordina was very interesting. The experiments which were shown were also very interesting and also can be done in class at kinder level. Children will definitely love these types of experiments since children at this age love hands-on activities. It will also enhance their vocabulary and knowledge for science.

Her ideas were very stimulating and perfectly planned for our young students. I particularly liked the hands-on and visual parts of her session as it made it much more engaging and relatable. I could easily picture each activity taking place at school. The science experiments were made using everyday resources which one would easily find at home. They were also very easy to follow and to explain and go hand-in-hand with the emergent curriculum. By conducting the experiments virtually during the session, Ms Cordina helped us plan and manage the time required to implement the activity. She also gave us many ideas on how to scaffold further and keep building on the students' interests. It was a very exciting, entertaining and stimulating session. Well planned and presented with great enthusiasm.

Professional
Development
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1st April 2022





Maria Regina College
Creative, Innovative, Professional



Maria Regina College
Centre for CPD

STEM Activities for Year 1

Ms Mary Rose Cordina

Maths, Literacy,
Science and
Technology Activities
which emerge
through the story
The Very Busy Spider

A Cross
Curricular
Approach
through the
story *The Very
Busy Spider*
by Eric Carle

Dear educators and parents,

At Maria Regina College we believe in a cross curricular approach. Cross-curricular work offers **a creative way to develop children's knowledge, skills and understanding while motivating them to learn through stimulating, interconnected topics.**

Here one can find various literacy, mathematics, science and technology activities which emerge from the story *The Very Busy Spider* written by Eric Carle. These activities which cross subject boundaries allow for investigations that engage children's imagination. Such activities help keep children focused and engaged.

You may go through these activities and see which ones you prefer to try out with your children. All activities can be easily carried out in class or at home.

Enjoy!!

Mr P. Decelis - Head College Network
Ms M.R. Cordina - E.O. Curriculum MRC

The Very Busy Spider by Eric Carle

After reading or listening to the story go over these concepts with your students:

- The **characters** are the people or animals in the story:

The characters in *The Very Busy Spider* are the **spider** and all her **farmyard animal friends**. The spider is the main character (the one the story is mostly about)

- Where the story takes place is the **setting**:

The Very Busy Spider is happening **outside**. We know this because there were farmyard animals that live outside. The spider was also spinning a web and was blown in across the field into the farmyard.

Data Handling Activity

- Solve a given problem by sorting, classifying and organising information in simple ways.
- Discuss and explain results
- Sorting different animals into two distinct categories first identified by teacher then by children themselves
- Resources: 30 animal cards, two hoops.

Data Handling Activity

- How many animals met the Busy Spider?
- Can you find them?
- We are sorting the animals, this group (hoop) are animals in the story and this group (another hoop) are the animals not in our story.
- Can you name any other animal here?
- *Children may pick any card and name it.*
- Ask children to sort the animals into two different groups. In one hoop, animals which we keep at home (pets) and animals we cannot keep at home (not pet animals).
- *Why cannot we keep a giraffe as a pet? (A giraffe is a wild animal)*
- *A pig is not a pet. What is it? (A farm animal)*
- *Butterflies are not pets. It is an insect. It has 6 legs.*

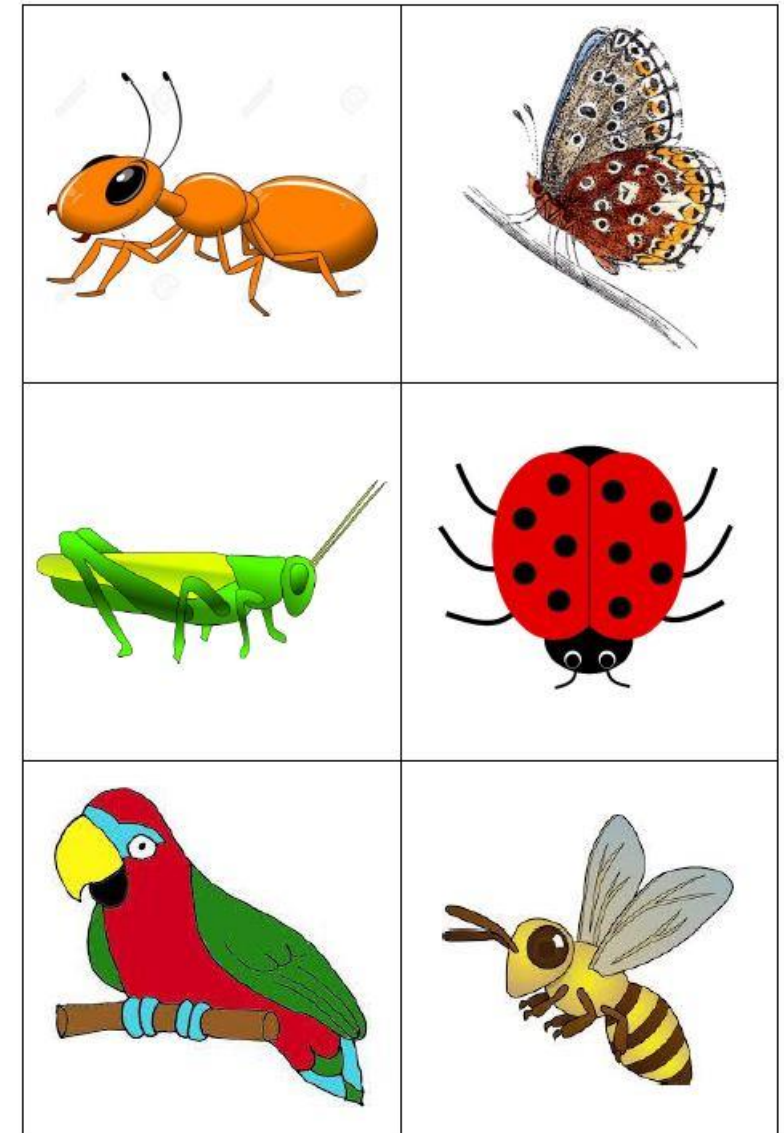
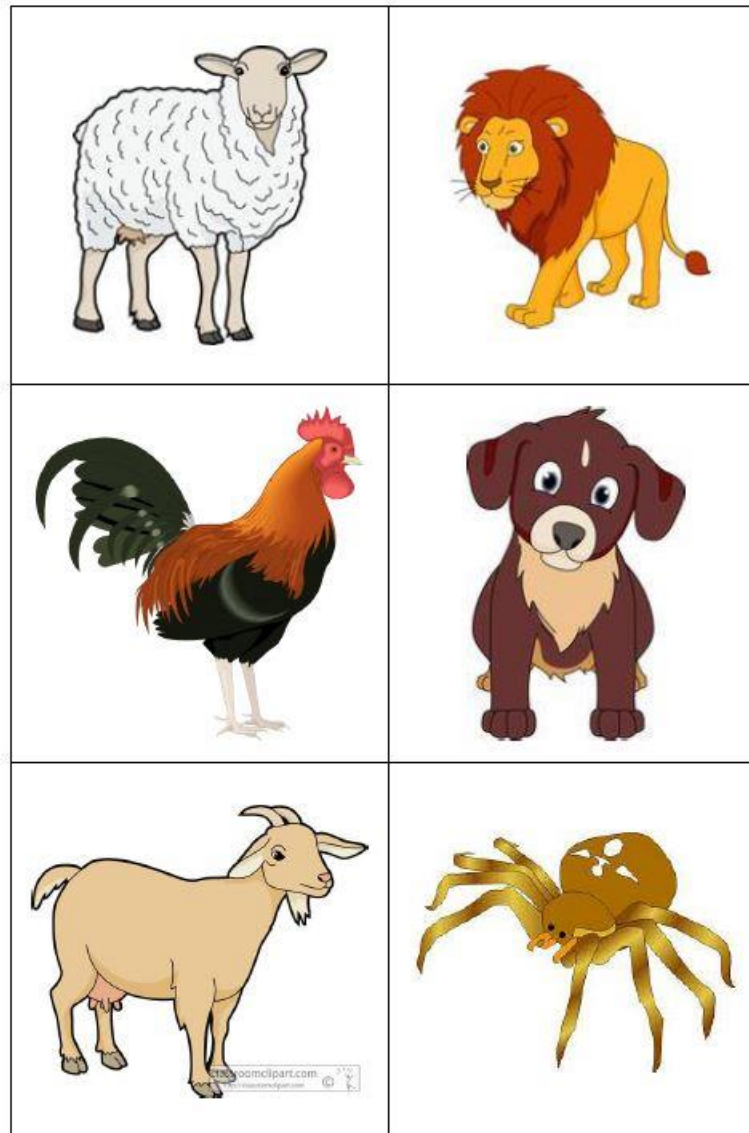
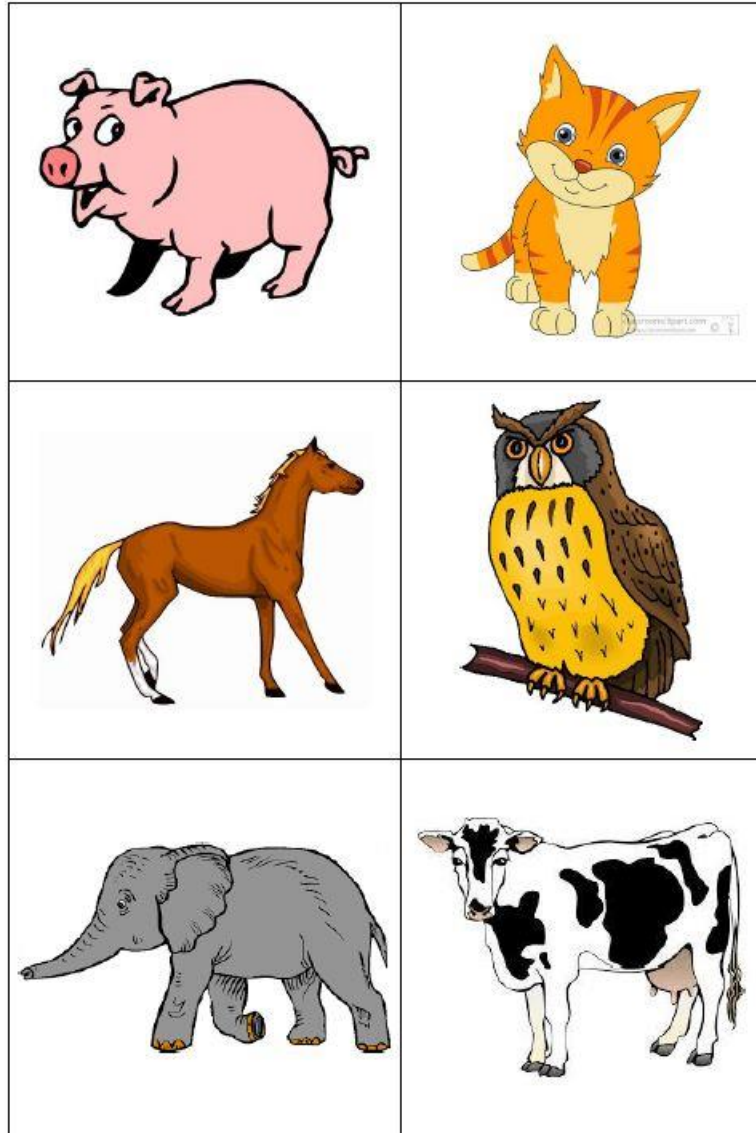
Data Handling Activity

- We said a butterfly is an insect. There are four other insects.
- Can you find them?
- Put insects in a hoop and not insects in another hoop.
- Repeat: These are all insects. They have six legs and these are not insects they have less or more than 6 legs.
- Can you sort these animals into two other groups?
- Why did you sort them this way?
- Discuss similarities and differences.

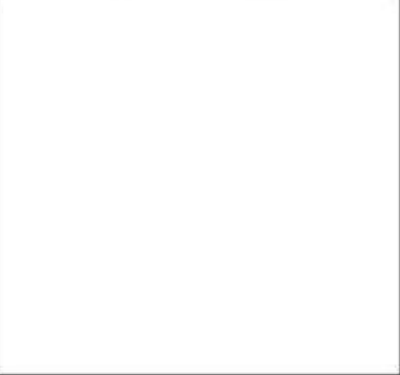
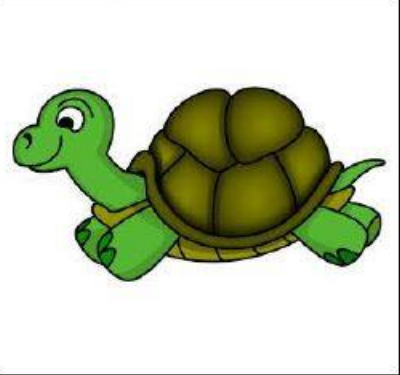
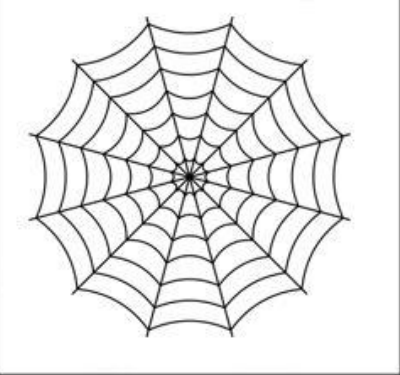
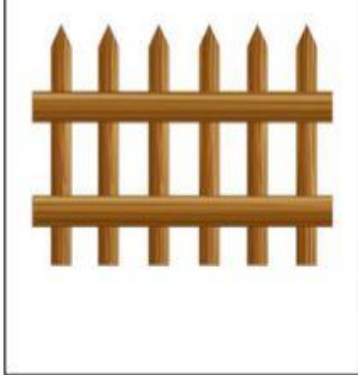
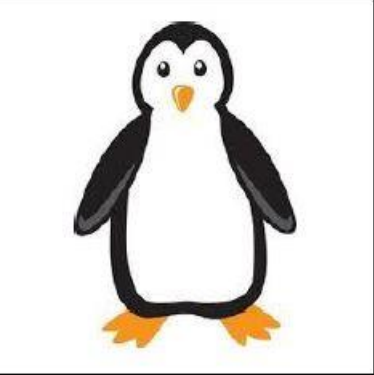
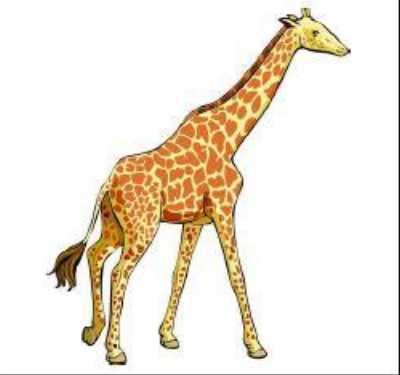
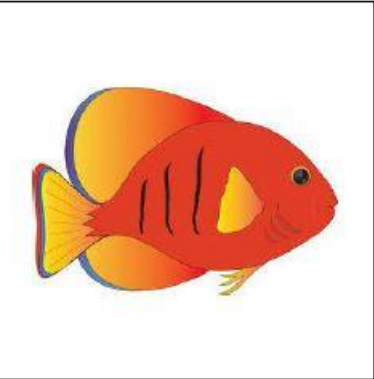
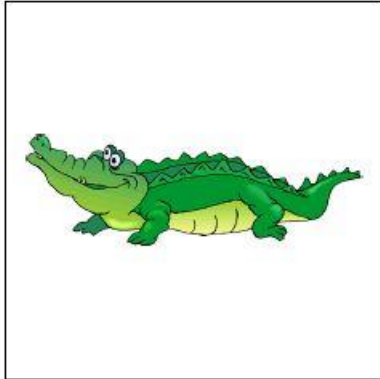
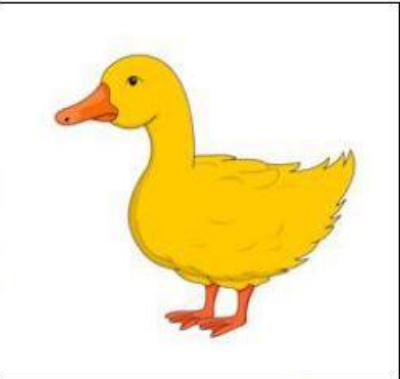
Data Handling Activity

- You can ask children to sort the living and non-living things from the story.
- *Is the fence a living or non living thing?*
- *Is the horse a living or non living thing?*
- *Is the spider a living or non living thing?*

Animal Cards for Data Handling Activity



Animal Cards for Data Handling Activity



Value of numbers up to 10

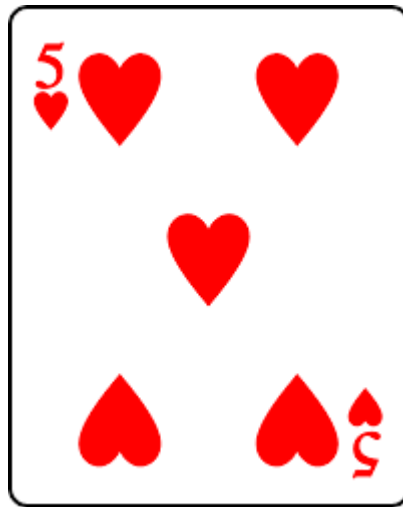
Place Value

There are lots of ways you can help your students to understand number and place value. Here are just a few ideas:

- Talk about numbers around us
- Numbers are everywhere, and they can tell us all sorts of different things. Some numbers tell us about an amount (for example, 'there are ten sweets in the jar'). Some tell us about position (for example, 'I finished the race in 2nd place'). And some are just labels (for example, 'we are waiting for the number 10 bus').
- Talking about how numbers are used in the real world can help your students understand why they are important. For example, you could talk about numbers when you are buying something, or telling the time, or catching a particular bus.

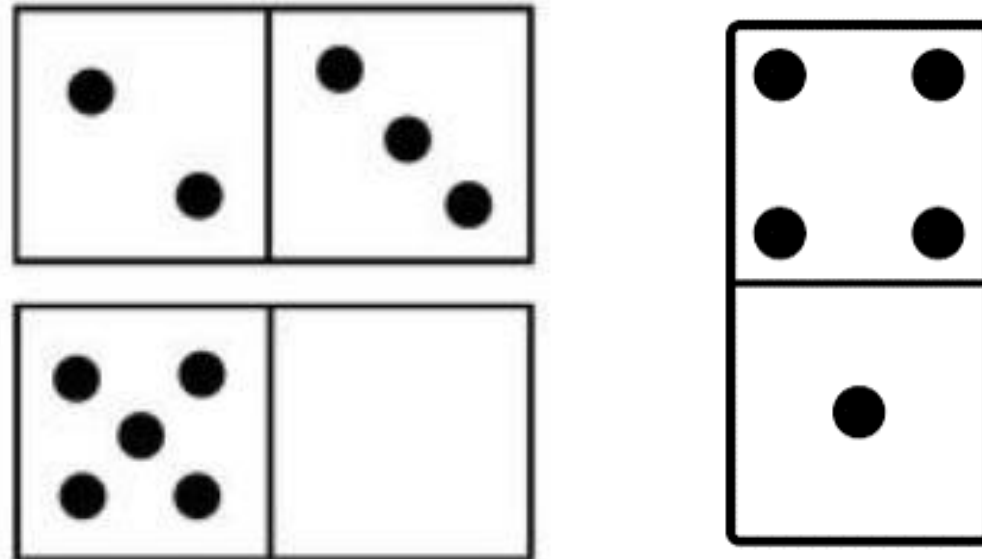
Value of numbers up to 10

- How many animals did the busy spider meet at the farmyard?
- Take a set of playing cards (with cards from 1 to 9). Tell a child to choose one and let's say s/he picks number 5.
- Tell another child to spin the colour spinner and let's say it stops on the green.
- Then tell the children to find 5 green objects in the classroom.



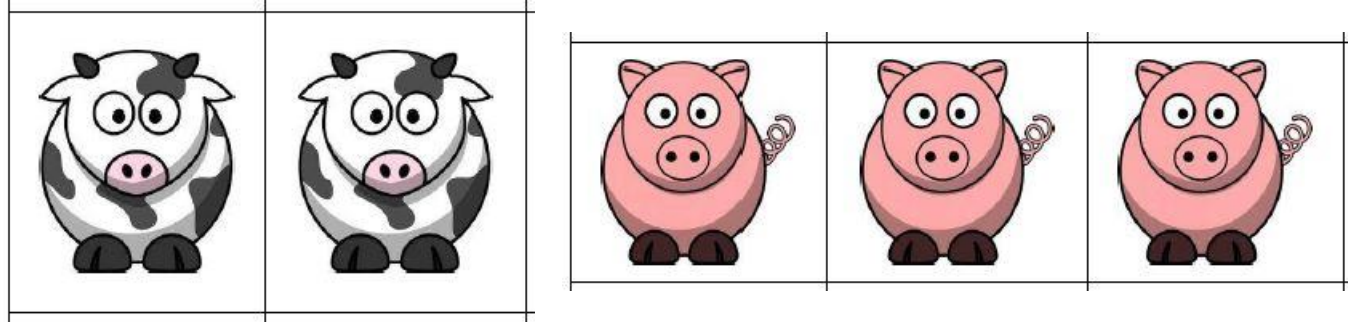
Value of numbers up to 10

- Using the same set of cards tell students to find the cards with numbers that are less than 5 or more than 5
- You can also shuffle the set of cards from 1 to 9 and tell the students to put them in order.
- You can also use dominoes and tell students to find dominoes with 5 spots.

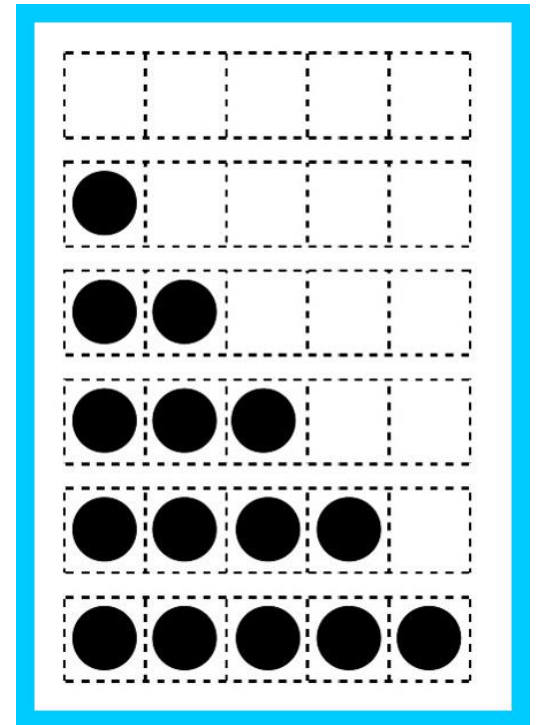


Value of numbers up to 10

- Also using the individual animal cards you can tell students to make 5 (or any other number) using two different animal cards.

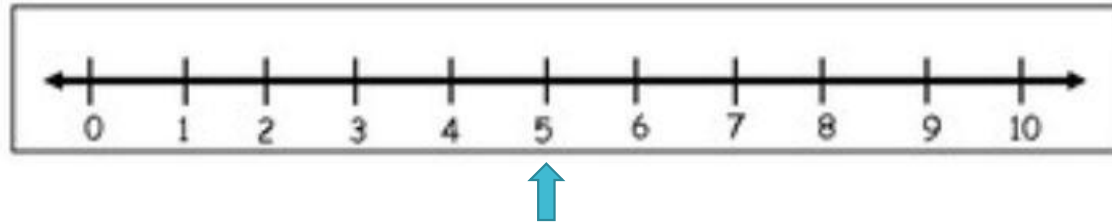


- Another activity can be using the Frame cards:
- How many?
- How many more to make 5?



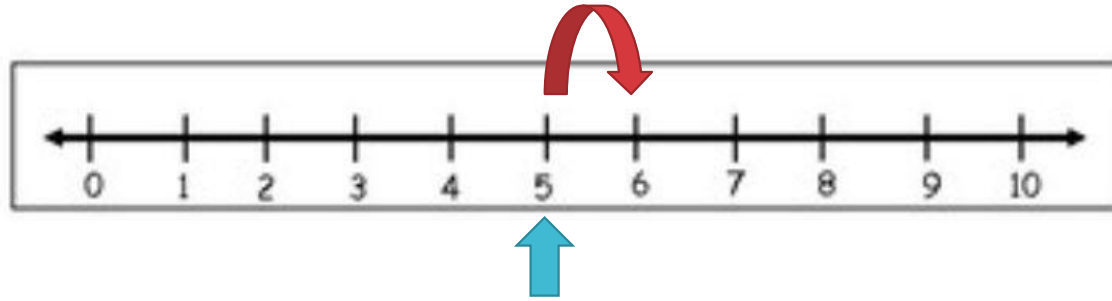
Value of numbers up to 10

- All these activities can be carried out for all numbers from 1-10.
- Use the number line to help children count up to 10. Here is a video *Counting 1 to 10 on the number line with Froggy*
https://www.youtube.com/watch?v=M-wG4X_dYLc

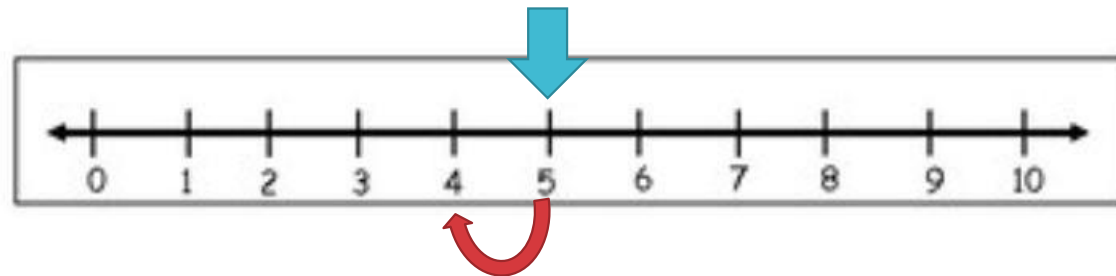


- Ask children to show a particular number on the number line, for example number 5.
- Repeat for other numbers from 1-10

Value of numbers up to 10



- Let us take this a little further.
- Now ask children what is **1 more than 5**. Show them on the number line and let them do the same. Repeat for other numbers.
- Now ask children what is **1 less than 5**. Use the number line to explain and demonstrate. Let children do the same on their number line.



- Repeat for other numbers.

Value of numbers up to 10

We can also teach number through the concept of time. For example:

5 o'clock

- How does the clock show 5 o'clock?
- Is it 5 o'clock yet?
- Where will you be at 5 o'clock?



Value of numbers up to 10

We can also teach number through the concept of money.

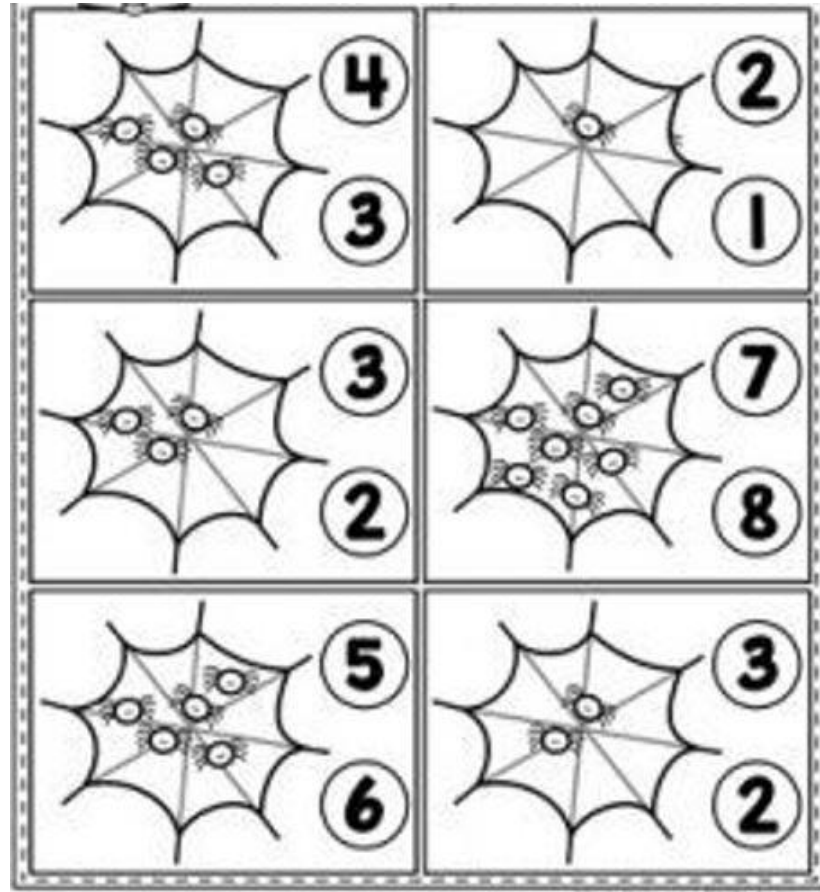
- Recognising coins
- Sorting coins
- Collecting 5c coins
- Making 5c using 1c and 2c coins



Value of numbers up to 10

Revising number recognition up to 10

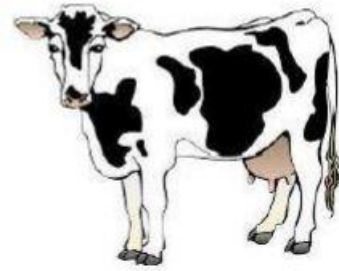
- This is a counting activity where children have to count the number of spiders and colour the correct circle .



Problem Solving

Problem solving

In a farm there are **roosters** and **cows**.



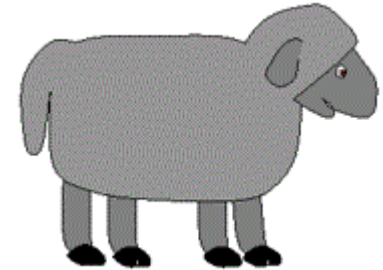
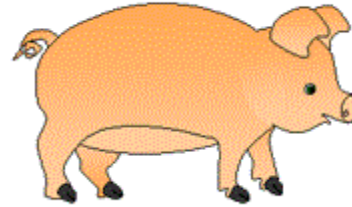
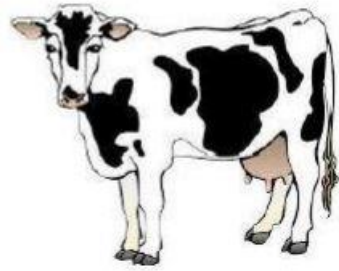
- The **total number of legs** is **10**.
- The **total number of heads** is **3**.
- How **many roosters and cows** can there be?

(Hint: You may draw a picture to help you solve the problem)

Problem Solving

Problem solving

In a farm there are **pigs, sheep** and **cows**.



- The **total number of legs** is **20**.
- How many animals are there?.

(Hint: You may draw a picture to help you solve the problem)

Spider Writing Tray

Resources needed to make the Spider Writing Tray

- Black Paper Plate
- Eight Black Plastic Straws or pipe cleaners
- Tape
- Round Wooden Lollipop Stick
- Black plastic spider (similar to this)
- Table Salt



How to make the Spider Writing Tray

- Turn the black paper plate over. Use tape to attach the eight black straws. More detailed instructions can be found on our Simple Halloween Crafts post.
- Pour table salt into the middle of the black paper plate.
- Attach a black plastic spider to the round wooden lollipop stick. Our spider had a hole underneath which the stick could slot into. This will create a spider pencil.



Spider Writing Tray

How to use the Spider Writing Tray

- Place a googly eye on the alphabet or number flashcard where the letter/number formation should start. Then place another googly eye on top of the salt in the Spider Writing Tray. Get your child to use the spider pencil to form the letter or number in the salt.
- Once the letter or number is complete gently shake the paper plate spider and the letter/number will disappear. Repeat the process with a variety of different letters and numbers. (You can practice the letters of animal names)



Bug Hunt: Observing nature using magnifying glasses

Bug Hunt: Observe and Learn

- Magnifying glasses help kids see things they have never seen before, like small insects close-up. It opens up a whole new world to them, which they find pretty amazing and will help them think and wonder!
- Take the children outside to observe nature close-up using magnifying glasses. Show them how to use the magnifying glasses safely.



Bug Hunt: Observing nature using magnifying glasses

Bug Hunt: Observe and Learn



- Let children spread out all over the outside area, looking under plants, logs and stones and using the magnifying glasses to look at finer details, such as the veins on a leaf or an ant's body. Tell them to draw what they observe.
- Talk about where to look for bugs and remind children to look under stones, bark and plants. Use bug pots to bring in any minibeasts for closer examination and let children draw what they see to share later.
- Tell children to return the bugs back to their environment after a short time.
- Ask the children to share what they observed with their classmates.