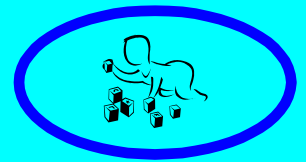


Ensure Your Child Succeeds At Math:

PYTHAGORAS' THEOREM

Frames 1 & 2

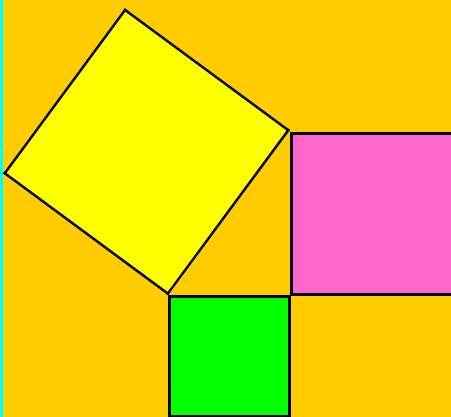


PYTHAGORAS' THEOREM AND CUISENAIRE RODS

Any young child who has completed the first stage of the program has learnt enough to understand the concept behind Pythagoras' Theorem.

They may not be able to articulate their thoughts or write them down, but they will understand exactly what is happening.

This can best be demonstrated as a story board that will form the planning stage of the animation.



FRAME 1

A **train** of yellow rods.

Children will know what a 'train' is.

Having been introduced to the **signs** they can 'read' the train as:

$$y + y + y + y + y \text{ or } 5y$$

$$5 + 5 + 5 + 5 + 5 \text{ or } 5 \times 5 = 25$$



FRAME 2

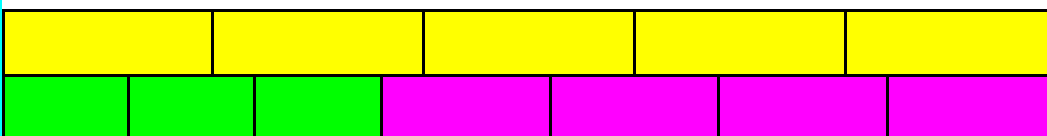
An **equivalent** train of green and pink rods **side by side** with the yellow train.

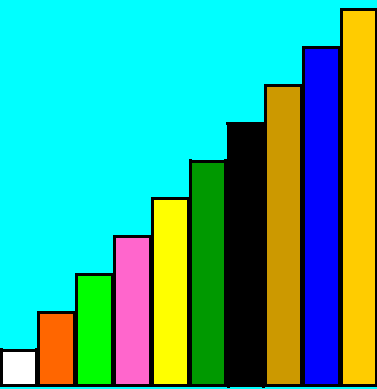
Children understand the concept of **equivalence** incidentally through **free play** and directly from the introduction of **signs**.

Again they will 'read' the **pattern** formed by the two **trains** as:

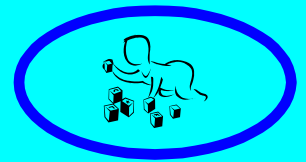
$$5y = 3g + 4p$$

$$\text{or } y + y + y + y + y = g + g + g + p + p + p + p$$





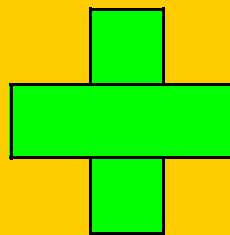
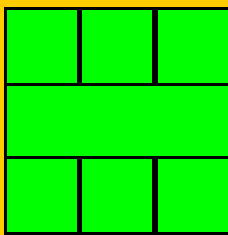
Ensure Your Child Succeeds At Math:
PYTHAGORAS' THEOREM
 Frames 3, 4



SQUARES

Children will probably have encountered 'squares' during sessions of free play. The rods reveal properties of squares very effectively.

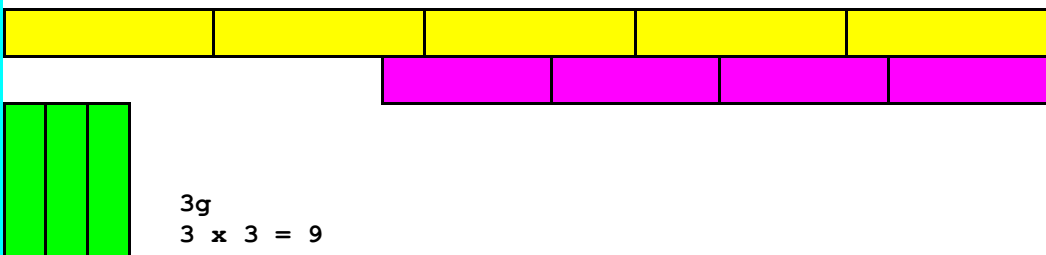
Squares can easily be made by placing rods of one colour side by side. They can be represented by a "cross".



Having been introduced to TRAINS at an early stage in the program children can see that a square is simply another way of arranging a TRAIN, only SIDE BY SIDE instead of END TO END.

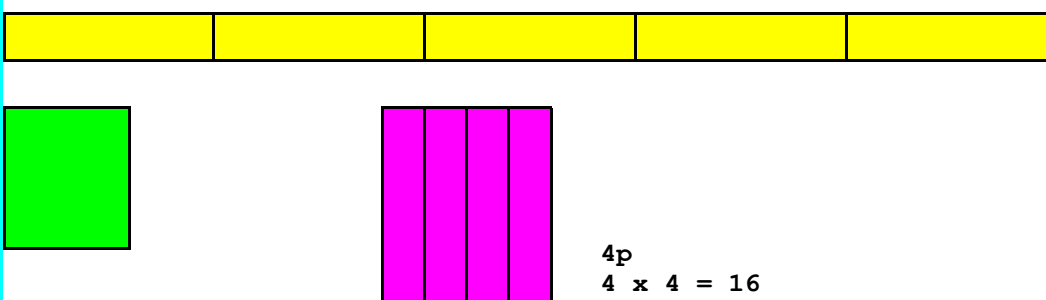
FRAME 3

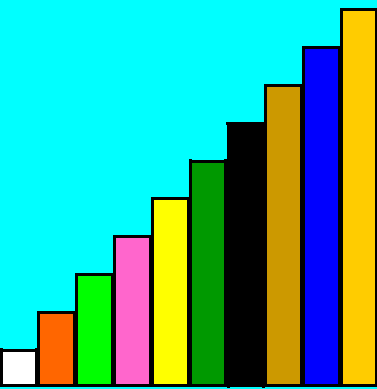
The **pattern** is now broken up.
 The green rods are re-arranged to form a green square.



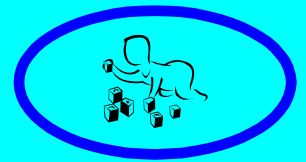
FRAME 4

The pink rods are re-arranged to make a pink square.





Ensure Your Child Succeeds At Math:
PYTHAGORAS' THEOREM
 Frame 5

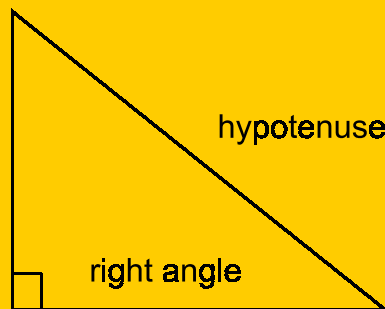


RIGHT ANGLED TRIANGLES and its HYPOTENUSE

Children may not understand what a right angle is but the inner shape made by the three squares clearly has three sides.

There is nothing wrong in giving young children the correct terminology provided they are actively involved in the process of understanding.

When children are eventually introduced to Pythagoras' Theorem they will know exactly what the terms mean because they have already understood it experientially.



FRAME 5

The three squares are now simply aligned together.

TIP: It is easier for children to align one rod of each square first. The shape created in the middle is a triangle.

It is obvious to children that the square that represents the longest side is equal to the other two squares together.

"The square of the hypotenuse of a right angled triangle is equal to the sum of the squares of the opposite sides."

$$5y = 4p + 3g$$

