

## Ladybird 1

### Numbers and Operations - Discovery

#### Learning Objectives

To develop strategies in order to make a collection having the same number of objects as another. Implement counting procedures and improve them.

#### Short Description

Four activities whereby the pupils must collect spots to colour a ladybird. In the first one, pupils can put the spots directly on the ladybird. It is not a mathematical problem. In the three other problems (each one consisting of two pages), the pupil can no longer put the spots on the ladybird and must find out a way to collect the correct number of spots in a box. Tools like number line, slider, and pen are available. On the following page, the pupil can put the spots of the box on the ladybird and check whether there is the right number in the box.

#### Use in Classroom

One or two pupils at a computer

#### Contribution of 1 2 3... Cabri

Exploration, Interactivity, Autonomy,  
The activity book provides various tools for counting and collecting as many spots as the number of spots on the ladybird. There are many problem solving strategies and the pupils can explore them. Feedback is given by the situation itself and the pupils understand immediately whether the number of collected spots is right or not. The teacher is not needed for assessing the pupils' answer. As the number of spots grows across the problems, the pupils are encouraged to search for efficient strategies.

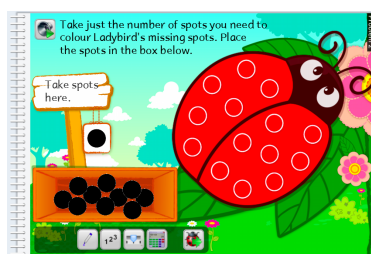
#### When and how to use?

The activity book can be used early in the year as soon as pupils can count up to 20. The teacher can organize a collective synthesis in which pupils share their different strategies, and a discussion about the most efficient strategies. This activity book is the first one of a series of 5 books of increasing difficulty, which can be used later.

### Some snapshots



One of the three problems.



The spots must be put in the box, as they cannot be put directly on the ladybird.



Then, on the next page, the pupils can check their answer by moving the spots from the box to the ladybird.



## The ten wheel

### Numbers and Operations - Practice

#### Learning Objectives

To be able to produce 10 as sums of two numbers.

#### Short Description

The pupils must group two cards, which equal 10, together in a circle shape. The cards display either points or numbers. When the pupils succeed, the shapes animate. On the first two pages, the pupils must drag pairs of cards where the sum is 10 into a circle shape. When the shape displays 10, it animates. On the first page, the cards display points, on the second, numbers. Following this, the circles already contain a card. The pupil must find the complementary card to obtain 10. The shapes display the sum of the cards that they contain but animate only when all of them contain 10. Then, on the next page, the shapes no longer show the sum of the cards that they contain. Similarly, they only animate when all of them contain 10. Finally, on the last page, the pupils find the missing number in sentences equal to 10. The pupils may revisit the previous pages to see the pairs and retain them in order to correctly answer the sums.

#### Use in Classroom

One or two pupils at a computer

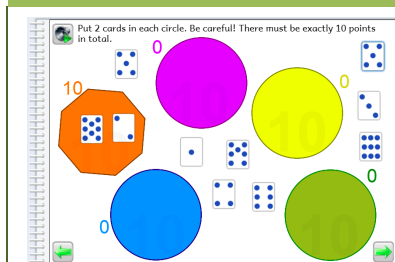
#### Contribution of 1 2 3... Cabri

Interactivity, Autonomy, Variations in the level of difficulty across the series of tasks  
Various feedback scaffolds the pupils and allows them to practice independent of the teacher. Variations in the feedback from one page to the next make it more difficult to use a pure trial and error strategy and foster the memorising of 10 sums. The pupils can revisit previous pages to help them find a complement to 10. They must however retain this information to use it in the sums when going back to the page.

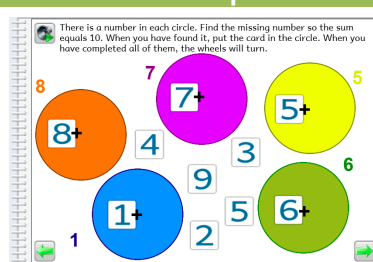
#### When and how to use?

The activity book can be used early in the year as soon as pupils can add 2 numbers up to 10.  
Pupils with difficulties in memorising these sums may redo the activity book.  
Once all pupils of the class have done the activity book, the teacher can organize a classroom discussion about the strategies used to find the complementary card. The teacher can also create with the class a summary of all pairs of sums equal to 10 and draw the attention of the class to the symmetry of the sums.

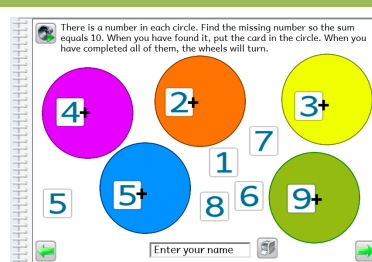
### Some snapshots



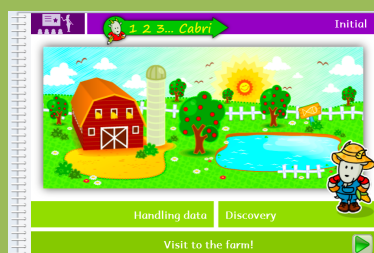
The shape animates when there is 10 points inside.



Same task but the shapes animate only when they are all filled with the right cards.



Same task but the total number of points is no longer displayed.



## Visit to the farm! Handling data - Discovery

### Learning Objectives

To read and to fill in rows and columns of a table. To structure collected data being sure to include all animals and to list each animal exactly once.

### Short Description

The first two pages support the pupils as they collect data and fill a table. On the last two pages, the data are already in the table and the problem is to recreate the situation described in the table. Numbers are smaller than 15.

The main goal of the activity book is to establish a relationship between a table and a situation. This is achieved through understanding the structure of the table.

### Use in Classroom

One or two pupils at a computer

### Contribution of 1 2 3... Cabri

Interactivity, Autonomy, Randomly generated data

The activity book provides feedback validating or invalidating the answers of the pupils. The pupils can correct their answers, if they are wrong. The contents of each page are generated randomly. One can regenerate a page with different data by clicking the recycle button.

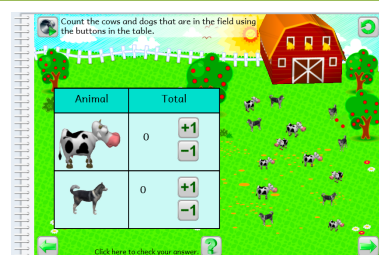
### When and how to use?

The activity book can be used early in the year as soon as pupils can count up to 15.

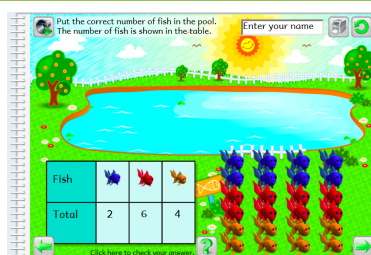
Counting the dogs and cows is not easy since they cannot be manipulated. The pupil must develop a spatial strategy to keep track of the animals already counted and not to leave out animals.

Once all pupils have done the activity book, the teacher can organize a class discussion about various strategies used to relate the structure of the table and the data as well as about the strategies for counting the animals.

## Some snapshots



Count the number of cows and dogs in the field.



Put the number of each kind of fish in the pool.



Put each animal in its farm as shown in the table.



## Am I always a cube? Geometry and Measurement Assessment

### Objective

Assess knowledge of elementary geometric shapes, in particular the difference between cubes and other prisms. Assess the perceptual recognition of a cube.

### Short Description

In each page, by dragging the vertices of a quadrilateral based prism, pupils must decide whether it remains a cube, regardless of how one tries to « distort » it.

### Use in Classroom

One or two pupils at a computer

### Contribution of 1 2 3... Cabri

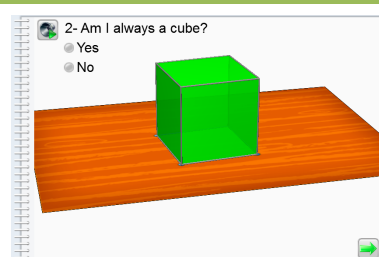
Dynamic representations, Manipulation in 3D, Change of the perspective  
The activity book allows the pupils to change continuously their point of view on the prism by using a right click. The pupils can drag the vertices of the prism. The prism is deformed while the geometric properties used for its construction are preserved. For example, when one vertex of a cube is dragged, the size of the cube changes, but it remains a cube. A right prism can look like a cube but as soon as one of its vertices is dragged, it no longer looks like a cube (see snapshot below).

A report summarizes feedback to each answer given by the student and indicates the total time spent on the activity book.

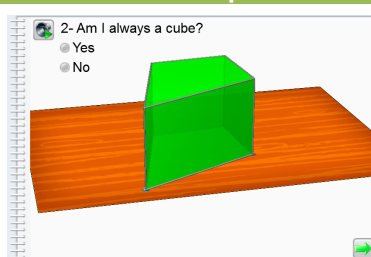
### When and how to use?

The activity book can be used, once pupils have been introduced to the shapes of cubes and right prisms and have worked with manipulatives.

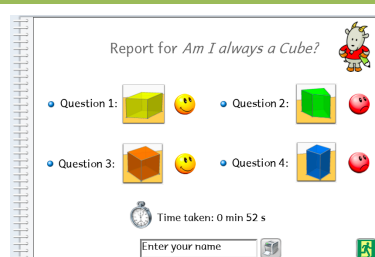
## Some snapshots



Example of an exercise.



Dragging the solid to check whether it is always a cube.



Final report for the student.