





**TOPICS:** SIMPLE STRATEGY AND SPATIAL GEOMETRY

- Objectives:
- learn to anticipate and develop short and long term strategies;
- situate an object in relation to yourself or another object;
- learn to save your resources.
- School level: 5 to 11 years

The main objectives of this activity are to learn to observe to displace and place an object with a precise aim but also to learn to save your resources.

The teacher sheet proposes several intermediate exercises to familiarise the pupils with the game's pieces and the different moves possible during a game (stacking, making a square, managing your reserve of spheres.)

### The objectives of the exercises:

- Exercise 1 Familiarise the pupils with the material and the vocabulary
- Exercise 2 Make stacks and squares
- Exercise 3 Save your spheres
- Exercise 4 Make squares with spheres of your own colour
- Exercise 5 Accomplish a combination of actions: make squares and stacks.

When the pupils have done these exercises, they can play a whole game using the knowledge acquired:

- Knowledge objectives: understand a rule.
- Know-how objectives: observation and concentration; anticipation; development of short and long term strategies.
- Behavioural objectives: respect for the opponent and the rules, communication.
- The pupil sheet can be kept by pupils. It outlines the game rules with vocabulary the pupils can understand and gives a list of words to remember (these words can be explained in class).





# Exercise 1: Familiarisation with vocabulary and the contents of the game

- ▶ Discovering the pieces of the game (from 4 years):
- The teacher asks each pupil to take a piece and describe it (free verbal expression by the pupils).

The teacher introduces the vocabulary to use according to the age group: «marble/sphere» then asks the pupils to count the number of pieces (15 spheres in each colour).

- The teacher asks the pupils to look at the game board: What shape is it? How many squares (spaces) does it have?
- ► Making squares (from 6 years):
- The teacher asks groups to make squares using the spheres (regardless of their colour) on one level («1st level»).

How many spheres do you need to make a square? How many squares can you make?

• Can we make any more squares now?

The teacher asks the pupils the question and lets them think about it before giving them the rule for stacking if the pupils do not find it themselves.

Repeat the question until the pyramid is completed by stacking. Count the number of levels built and the number of spheres needed.

Vocabulary: marble/sphere, square, stack, level.

▶ Making pyramids (from 9 years): Let the children make pyramids to familiarise them with the game. Go back over the definition of a pyramid and show examples.



# **PUPIL SHEET 1: from 6 years**



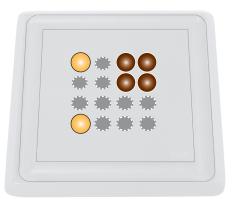
### **LEARN THROUGH PLAY**

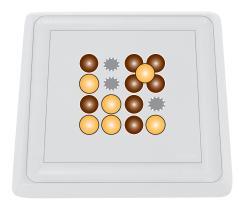


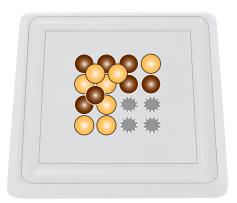
# **Exercise 2: Making stacks and squares**

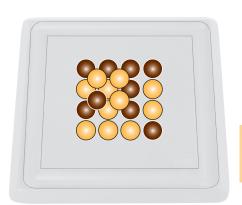
# **⇒** Locating squares

The teacher distributes photocopies of the game board and asks the pupils to locate the squares. Circle the squares that you find on each game board (the spheres from the same square can have different colours but a sphere can only belong to one square).



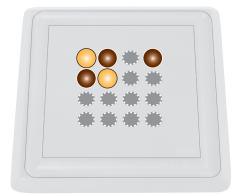




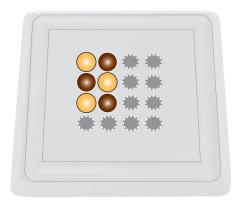


## **⇒** Making stacks

The teacher explains: «It is possible to stack a sphere taken from the reserve at the centre of each square .»



I have light spheres and it is my turn to play. Where should I place a sphere from my reserve to make a stack?



I have dark spheres and it is my turn to play. Where should I place a sphere from my reserve to make a stack?



I have black spheres and it is my turn to play. Where should I place a sphere from my reserve to make a stack?

# **PUPIL SHEET 1: from 9 years**

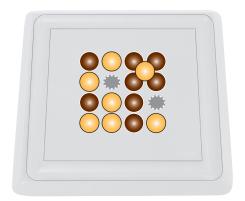


### **LEARN THROUGH PLAY**

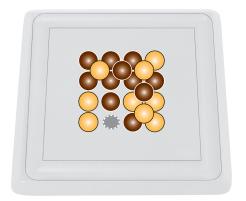


# **Exercise 3: Saving your spheres**

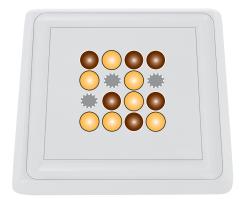
The teach reminds the pupils: «In the centre of each square you can stack one sphere, either taken from the reserve, or from the board if the sphere does not have another sphere stacked on it. The aim is to be the last to place a sphere at the top of the pyramid, so you need to learn to «save» your spheres by using spheres which are not blocked on the game board.»



I have dark spheres and it is my turn to play Which sphere should I use? Circle it and show its move with an arrow.



I have light spheres and it is my turn to play. Which sphere should I use? Circle it and show its move with an arrow.



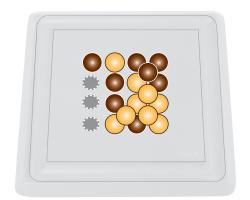
I have dark spheres and it is my turn to play. Which sphere should I use? Circle it and show its move with an arrow.





# **Exercise 4: Making squares in your colour**

The teacher explains: «When you make a square in your colour you can recover 1 or 2 unblocked spheres (including the one you have just played). This helps you to save spheres.



I have light spheres and it is my turn to play.



I have dark spheres and it is my turn to play.



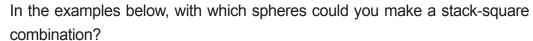


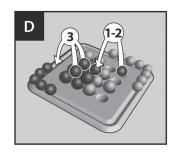
# **Exercise 5: Make a stack-square combination**

In Pylos, the aim is to move your spheres cleverly to save as many as possible. During the game, a player may make a combination of moves which means he has nearly won.

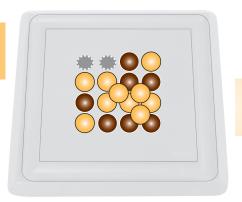
He advances like this:

- he moves one of his spheres which is already on the board up a level (Fig. D 1).
- as a result he has made a square of his coloured spheres (Fig. D 2).
- now he can immediately take 1 or 2 spheres from the board for his reserve (Fig. D 3).









## LET'S PLAY PYLOS!



## 

Setting up: at the beginning the spheres are placed in the reserve at the base of the pyramid (fig. A). The 2 players draw their colour. Light starts.

## > The aim of the game

Be the first to put a sphere on the top of the pyramid (fig.E) Be careful: when a player has no more spheres in his reserve, he has lost.

### > Getting started:

Each player puts a sphere for his reserve on the square of his choice. Each player has only 15 spheres in his colour. To win the game he must «save» his spheres, either by stacking them on a square (the colour of the spheres of the square is not important), or a square in your colour (a light or a dark square). With these 2 moves you play spheres already on the board and do not use any from your reserve.

#### > A round:

on his turn the player has a choice between:

- placing a sphere from his reserve on the board;
- placing a sphere from his stock on one of the squares of spheres (Fig B 1);
- placing one of his spheres already on the board, on the condition that he makes:
- 1. a stack or a square: when on the board or at higher levels, one or more squares of spheres are formed, a player can choose to stack one of his spheres on it OR
- 2. à square in his colour: a player who makes a square of spheres in his colour (Fig C 1) immediately recovers 1 or 2 of the spheres on the board for his reserve (Fig. C 2); he can recover any sphere belonging to him from any level including the one he has just placed but of course he cannot recover spheres which are under other spheres.

#### A special move: stack or square.

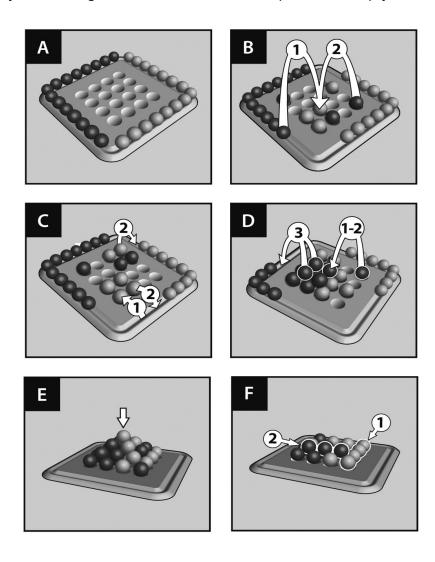
By playing cleverly, in one move a player can:

- raise one of his spheres already on the board (Fig. D 1);
- as a result make a square with squares in your colour (Fig. D 2);
- and immediately recover 1 or 2 of his spheres for his reserve (Fig. D 3)

# ⇒ end of the game :

The winner is the player who places his last sphere on the top of the pyramid (fig. E).

A player immediately loses the game when his reserve of spheres is empty.



### ⇒ > Didactic variations:

Simplified rules: when starting, you can play without the «square in your colour» rule: a player can only save spheres with the stacking rule.

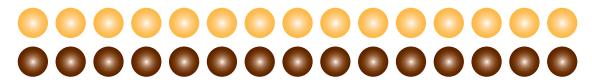
# **PUPIL SHEET: GAME HELP**



LEARN THROUGH PLAY



# Game pieces:



**How to play: (variation for children)** 

**Preparation:** to start the game the spheres are put in the reserve at the base of the pyramid. The 2 players draw their colour. Light starts.

**The aim of the game:** To be first to place a sphere on top of the pyramid. Be careful: when you have no more spheres in your reserve, you have lost.

### Playing the game:

In turn, each player places a sphere from his reserve on the square of his choice. Each player is obliged to play his turn. Each player has only 15 spheres in his colour. To win the party you must «save» spheres by making stacks on a square, regardless of the colour of the spheres in the square. By doing this you can recover spheres from the board rather than using spheres from your reserve.

On your turn you can choose between:

- placing a sphere from your reserve on the board.
- placing a sphere from your reserve on one of the squares of spheres, even if the spheres are not of the same colour.
- if there is a square of spheres, you can move one of the spheres already on the board and put it on the square, but only if this enables you to raise your sphere by 1 or 2 levels. Be careful: a sphere cannot be moved if there are already spheres placed on it (the other spheres would fall).

### The end of the game:

The winner is the player who places his last sphere on the top of the pyramid. A player immediately loses the game when his reserve of spheres is empty.

#### Words to keep in mind:

stack, reserve, square, pyramid, save, level.