


All materials can be found in the binder and **YELLOW BAG**



Check the flash drive for digital resources (videos, PowerPoint, PDF, etc.)

# CHALLENGE #4

## DESCRIPTION

## COMPOSTING

### ⊕ Objective

Using a scientific process, gain an understanding of how composting works.

- Scientific process
- Organic waste experiment



### Materials for the brigade

- Green brigade sheet
- Green tickets
- "Did you know?" booklet
- Awareness posters



### Materials for the teacher

- Flash drive
- Waste management glossary
- Quiz (template to be photocopied)
- Evaluation sheet

## ☰ Procedure

### Step 1: Prepare

- Browse the waste management glossary to become familiar with the terms.
- Go to the challenge 4 tab of the flash drive.
- Photocopy the necessary number of quizzes for the students.
- Become familiar with the stages of the challenge and establish a schedule for carrying out the activities. You could do all the activities in a few days or spread them out over several weeks.

### Step 2: Class work

- Hand out the "Composting" quizzes to the students.
- Show video 4 of Theria & Larinie while telling students that they must listen carefully to complete their quizzes.
- Give the students a few minutes at the end of the video (either alone or in teams) before giving them the answers.

### Step 3 : Form the green brigade

- Find two or three students to join the green brigade for the challenge.
- With the brigadiers, develop an action plan based on the brigade sheet provided in the bag.

### Step 4: Launch the challenge

- Introduce the green brigade to the class while explaining that you are embarking on a scientific experiment on composting.
- Present the composting signage poster on display in appropriate locations in the classroom.

### Step 5: Experiment

- While following the instructions on the back, complete the experiment.

### Step 6: Evaluation

- Fill out the evaluation form provided in the binder and send the answers to the indicated email address.

# COMPOSTING EXPERIMENT

## ORGANIC WASTE

### Objective

Help the students develop their scientific spirit through this experiment on the biodegradation of organic waste.



### Materials in the kit

- Scientific process (model to photocopy)
- 2 Mason jars filled with soil
- Thermometer
- Observation sheet



### Materials to procure

- Organic waste such as an apple cut in half, orange peel, banana peel, etc.
- Piece of styrofoam

## Procedure

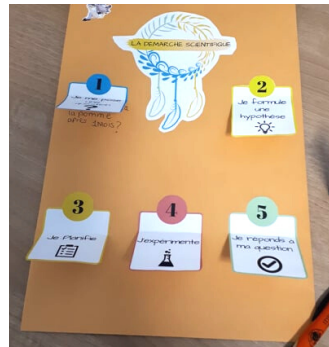
### Step 1: Prepare

- Determine the duration of the experiment (at least one month).
- Either at school or at home, find a piece of Styrofoam and brightly colored organic waste such as a banana peel, an orange peel or an apple cut in half.
- Photocopy the necessary number of "Scientific Process" documents.

### Step 2: Scientific process

*This small activity will allow each student to think individually about the experiment while becoming familiar with the scientific process.*

- Distribute the scientific process to each student (or in team) and explain the experiment you are preparing to do in class.
- Each student cuts out the boxes and glues them on a sheet to make "little doors".
- Under the little door labelled "I wonder", each student can write, for example: "What will become of the apple core after one month?"
- Each student then formulates a hypothesis under the second little door such as: "It will become soil."
- Help the students to make a list of the steps of the experiment (see step 3) under the third little door.
- Under the fourth door, students could draw what the experiment will look like.
- Carefully put away the students' scientific processes so that they can be brought out again at the end of the experiment.



### Step 3: Experiment

- Gather the students around a worktable.
- Place the organic waste in one of the Mason jars and the styrofoam in the other so that they are easily visible through the glass, then cover them with soil.
- Place the two jars without lids on the edge of a window so that they can easily be seen every day.
- Paste labels on the jars with the start date.

### Step 4: Observation

*The brigade could be responsible for observing and watering the jars.*

- Place the observation sheet near the jars and record the changes every day for at least one month.
- Water lightly every day.

### Step 5: Results

- After a minimum of one month, gather the students around a worktable.
- Remove the contents of the Mason jars. What remains? How did the two materials change?
- Review the scientific processes of the students.
- Each student can answer the fifth little door of their scientific process to confirm or refute their hypothesis.