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- having a practical session beforehand to familiarise learners with the different components of soil. The handout Testing soil may be useful for this
- a quiz, word search or gapped handout to check understanding of technical terms. One of the trial sites, Shipley College, used the 'hangman' approach to help learners to become familiar with technical terms. One learner (or group) indicated how many letters there were in the word – the other learners then suggested letters. Where the word contained these letters the first learner wrote this in the appropriate place in the word. Where it did not belong, the learner drew part of the hanging man.

Later in the learning process You can also use the cards to help **learners revise or deepen their knowledge of the topic**. For example, you could use the activity as a basis for discussing good and bad practice.

Note: the activity is most relevant to **Priority 1: How you teach theory**.

## How to use the activity

You can use the cards in many different ways. Here we provide three suggestions which have all been used successfully.

### Option 1 - Rummy

- Shuffle the cards and decide who will deal.
- Dealer gives out six cards per player in clockwise direction. He or she places the remaining cards face down in the centre of the table and turns over the first card to create a discard pile.
- The first player decides whether to take the discarded card or the card on the top of the pile. He or she then throws away one of his or her cards.
- When a player has three cards from one suit he or she creates a 'set' and puts this on the table face up.
- The winner is the first to make two sets. The game may then continue or finish at that point.





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Horizontal lines for writing notes.

### You could also use the cards:

- for matching activities – in small groups or one-to-one with work-based learners
- for background information
- to help with key skills and language, literacy and numeracy (LLN) skills – for example, by focusing on spellings of technical terms.

### Extension activities

You could extend this activity by :

- introducing concepts such as cation exchange
- discussing ways of modifying soil for a particular purpose – this could lead into the Soil Preparation activity.

### Soils – interactive version

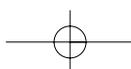
There is an interactive version of **Soils** on the continuing professional development CD-ROM and learner CD-ROM.

### Instructions

The aim of **Soils** is to become familiar with the characteristics of sand, silt and clay.

The dealer deals one of each soil type. The players must match the upturned card with one of the soil suits. The activity continues until all the cards have been placed correctly.

When the game is completed, the player is given a percentage score, based on the number of correct turns taken.







### Extension activity

You could ask learners to record their chosen sequence, and justify why each task is carried out – and possibly the effect on the soil of performing that activity. They could also discuss this with the work supervisor. You could also ask learners to justify why they rejected the other tasks.

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| Task (in sequence) | Reason why the task is needed at this stage | Effect of this task on the soil |
|--------------------|---|---------------------------------|
|                    |   |                                 |
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|                    |   |                                 |
|                    |   |                                 |

There is also an IT version of the Soil Preparation activity on the CPD CD-ROM and the Learner CD-ROM.

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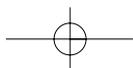


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### Soil Preparation – interactive version

This version of **Soil Preparation** is intended to be used in conjunction with practical activities and is essentially a sequencing exercise.

It is recommended that learners complete the data sheet while working on a real site. This can then be used to create a sequence of soil preparation activities on the interactive version. Learners can print their selected sequence, add notes to justify their choices and discuss their choices with each other and the teacher or trainer.



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# Thrive!

## What it is

This activity aims to help learners develop their understanding of the relationship between the plant and the soils in which they grow. It can also help to develop communication (and other) skills.

There are two versions of **Thrive!**, one for agriculture and one for horticulture.

The aims of the activity are for users:

- to select plants that will thrive in each of the plots or fields on their board
- to suggest how to manage the soil to encourage the chosen plants to thrive.

**Thrive!** is essentially a matching activity. You could use a similar approach elsewhere in the curriculum where the ability to match is useful such as symptoms of disease or maintenance of parts of a machine.

## Contents

| Horticulture version   | Agriculture version   |
|--|---|
| <ul style="list-style-type: none"> <li>■ 6 boards, each with six different plots to be planted</li> </ul>      | <ul style="list-style-type: none"> <li>■ 6 boards, each with six different fields to be planted</li> </ul>    |
| <ul style="list-style-type: none"> <li>■ 82 plant cards giving details of site and soil preferences</li> </ul> | <ul style="list-style-type: none"> <li>■ 82 crop cards giving details of site and soil preferences</li> </ul> |
| <ul style="list-style-type: none"> <li>■ Score cards</li> </ul>  | <ul style="list-style-type: none"> <li>■ Score cards</li> </ul>   |

There is one board for each team of up to three players. It is good to have more than one per board to stimulate discussion. It can be played by up to 18 participants (or more if more boards and cards are used).



### How to use the activity

It is important that you prepare the activity for your learners before you use it with them. You may wish to remove certain crops or plants that are not appropriate to your area.

Select the version you will use – horticulture or agriculture.

1. Each player or team takes a board with six different types of plot or field
2. Shuffle the plant labels and place them face down on a table
3. Players take turns to collect a plant card from the pile
4. They then try to match the plant with one of the plots or fields on the board (discuss their choice within their teams). They can use the information on the board and on the plant cards to help them
5. There are then two choices:
  - place the card on the chosen plot or field on the board. This is then 'planted'
  - to return the card to the bottom of the pile, and collect another card. They may do this only once each turn.

On the next turn, the player collects another card and evaluates it in the same way for another plot or field. The activity continues in this way until all agreed plots or fields have an attempted planting.

If played competitively, the winning team is the one with the most successfully planted plots or fields.

Players can use the score card to keep a record of the reasons for their choice of planting, and what they will do to the soil to help ensure the plant thrives. This might help when they come to justify their planting choices.



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If you do this you will obtain some unlikely combinations. But it will also present useful opportunities for discussion about why they are unlikely, and what might result if it occurred. If the teacher agrees the combination is not credible, roll the dice again to obtain a different combination. Record the 'set up' information for each plot or field on the score card. After each roll of the dice, discuss as a group and with the teacher, the implications for the plot or field.

You can use the dice to emphasise factors that may be relevant to the level of learners, the subject area, the experience of the group and even local ground and climate conditions. The dice can also be used to adapt the activity to meet individual learning needs.

### **Timed activity**

All the cards could be dealt out and players have to find a plant for each plot from their hand within a stated time limit.

### **Trading**

The plant cards are dealt out to teams so that each has just enough cards to 'plant' each of their plots/fields. Each team must then either use the cards they have been dealt, or trade with other teams to obtain the best possible planting for their board. This is an opportunity to develop group interaction and communication skills.

### **Real fields, plots and plants**

The activity can also be used with plans of actual fields or plots such as from the learners' workplaces. Real crop/plant seed labels (or other information) could be incorporated into the activity – the selection can be varied to be most relevant to the learners. In this case, they may also be able to bring actual information on acidity/nutrient status/other factors and so help to link what they do at work with what they learn in theory sessions.

### **Environment and conservation**

Once planting is complete, learners can discuss where possible hedge planting or other conservation measures might best be placed, or how the management of the soil affects soil conservation, compaction, water retention/runoff, erosion, nutrient loss/pollution. A plan can be drawn up to detail how best to manage the areas to minimise adverse environmental effects, paying particular attention to Cross Compliance issues (Agricultural version).

**Consideration of soil and crop rotations (agricultural version)**

The activity could be played using only two fields on each board (using the 'blank' fields available on the CD-ROM), where the learners must collect all the cards needed for their fields for a complete rotation, playing in turns and evaluating their choices as described above.

Discuss soil management and conservation, biodiversity, soil fertility, disease control, efficiency of cultivation, the relationship between soil management and soil air and water (preventing compaction, managing runoff, managing soil to optimise moisture availability without waterlogging), and the relationship between these things and optimum cropping sequence. Learners' completed score cards should reflect sound environmental management as well as good crops.

**Links with other parts of the curriculum**

The activity can be used to link work on soils to other topics forming part of the programme. Learners could research the availability of each plant chosen, cost the proposed planting, calculate gross margins or the machinery required to grow the crop, plan the maintenance requirements of the planted areas.

**Developing language, literacy and numeracy (LLN) and key skills**

Debate different planting options (communication), calculate field areas, work rates of machinery or estimate labour needed (number) or plan the planting work (working with others). You could also link to possible assignment work, using a real garden or farm.

**Use of supplementary information**

Learners could use reference books or other sources of information to identify and justify suitable crops.

**Blank cards**

Blank cards are supplied in the resources folder so that the selection of plants can be made more relevant to the learners.

Lined writing area consisting of 20 horizontal lines for student notes.

