



## Finance on the Farm.

This workshop/lesson links to many sections of the GCSE Business Studies syllabus, including....

Business in the real world - purpose & nature, structure, ownership, aims & objectives, stakeholders, location, planning, expansion.

Finance - role, revenues, costs, profits & loss, cash & cash flow, finance sources, break-even, using data for decisions.

External influences on business - stakeholders, ethics & environment, economy, globalisation, adaptation, technology, competition.

**Whilst it would be most beneficial to undertake this activity during a visit to a farm, it is possible to use the Button Farm case study as a basis for all discussions.**

**Useful props for students when completing this activity during a visit to a farm:**

- ❖ A map of the farm, which shows the names and sizes of each of the fields.
- ❖ Data detailing what was grown in each field last year, how much seed was planted (cost per hectare) and how much grain was harvested (value per hectare).
- ❖ Data detailing what was used to help the crop in each field grow, such as herbicides, fungicides, insecticides, trace elements, compost, etc. (combined cost per hectare).
- ❖ Data detailing how much labour and machinery has been used in each field over the year and what the estimated cost for these are per hectare. It may have been that some crops/fields sprayed more than others?

**Useful props for students completing this activity within a classroom environment:**

- ❖ Numerous videos are available online which provide a good introduction to arable farming:
  - The background to arable farming in the UK, a module from a complete programme about agriculture in the UK. Produced by Breeze and Freeze Ltd for the Women's Farming Union, sponsored by HGCA.  
<https://www.youtube.com/watch?v=B8Vd1WWgFog>
  - Royal Cornwall Farming & Food Education for Schools: Learn about arable crops  
<https://www.youtube.com/watch?v=9hAS6RpTgQ8>
- ❖ The Button Farm Case Study details all of the financial data necessary for this activity.

Remember, this activity is designed to encourage students to apply their understanding of financial success to a working business without getting over complicated so that it scares them! The data does not need to be too detailed, simply to give them realistic figures to work with, so they are able to calculate the variable costs and income per field.

Students working in groups would benefit from a couple of white boards and pens per group to note down their thoughts and calculations. Access to calculators is also necessary.





**INTRODUCTION: Class discussion led by the Farmer/Teacher (10 – 20 mins)**

What is a farm? Some students may benefit from an informal introductory discussion of what they regard as a farm. It is worth considering that a farm grows/rears food, and manages the countryside as a whole (fields, hedgerows, woodland, coastal paths, farm buildings) and that the rural economy employs many hundreds of thousands of people. A useful activity would be to create a mind map of jobs in the agricultural and rural economy, to illustrate the scale of farming and its importance within the UK economy.

Sources of finance: Students may benefit from refreshing their memories regarding the different sources of finance that can be used to purchase a business. They can then be encouraged to consider what would be an appropriate source of finance to purchase a farm and why.

Revenue/turnover: Like most businesses the Farmer will sell goods and services in return for revenue. Students should be encouraged to consider the different opportunities that exist on farms to raise revenue/turnover. Farmers are often reliant upon non-traditional activities such as holiday lets and storage facilities to supplement their income. Although such operations are often seasonal and reliant upon good weather. Can the students identify any regular/seasonal sources of income on the farm and explain how they may be affected by internal and external influences?

Fixed and variable costs: As a business, the farm must manage its costs carefully, but it is not always easy to decide whether costs are fixed or vary with output. Students should be able to identify which costs are fixed and therefore not dependent on output, and those which increase with activity. Deciding how to calculate the variable cost per unit is not always easy in a business such as farming. On a farm, machinery has numerous uses and labour is a high percentage of the costs. Encouraging the students to appreciate the difficulties of effective cost allocation and therefore control for the Farmer will help them to understand the pitfalls of financial analysis for many businesses.

**ACTIVITY: Group activity using Button Farm case study or data from farm being visited. (30 mins)**

Making effective business decisions: As a business the Farm must grow and produce products that will sell for a good price. This means that the Farmer needs to be very careful when choosing what crops to grow and what animals to rear. An arable farmer must decide almost 16 months before he harvests a crop, what that crop will be, so that he can prepare the soil effectively, even though he has no idea of market conditions that far ahead.

The groups of students should be able to compile a list of the different business decisions that the Farmer must regularly make. Suggestions could be:

- i. Staffing
- ii. Crops being sown
- iii. Purchasing new capital items
- iv. Investing resources in the maintenance of existing assets

The aim of this brainstorm is for the students to appreciate the complexity of running a business. More advanced students can consider how they would ensure that they are making the best decisions in these key areas and where they would source the information needed to help.





Deciding which crops to grow: Using data from previous years the students can calculate the crops which have given the Farmer the best return on their investment. Each group would benefit from their own copy of the farm's map and a white board, pen and a calculator. Alternatively a print out of the Button Farm case study will suffice.

- a) Each team is to be allocated a field and be asked to predict how profitable they feel that field would be compared to others on the farm, using general knowledge such as opportunities for economies of scale, the value of good quality soil, the opinions formed during a tour of the farm.
- b) Once the fields have been discussed each team will find out what is being grown in their field this year and will be asked what data they will need to find out whether their field will be profitable or not?
  - i. Students are to be encouraged to list the data they will require to help them answer this question. They may need to be given the headings 'fixed costs', 'variable costs' and 'revenue' and will then list under each heading what is relevant for their chosen field.  
*N.B. to simplify the activity we will ignore the fixed costs as they will remain constant whatever crop is grown and are therefore irrelevant. It is also impossible to predict accurately all of the costs and revenue associated with this years' crops, and so last year's data can be used where necessary.*
  - ii. Data can either be provided as a prepared sheet once the students have identified everything they need to know or as smaller snippets when requested by each group – depending on the level of differentiation required.
  - iii. The Teacher, Farmer and LEAF Education REC should support the groups as they consider how to answer the question, prompting when necessary.
- c) Each group will be able to calculate the profitability of each field using the following equation:

PROFIT = REVENUE – COSTS

COSTS = FIXED COSTS + VARIABLE COSTS (COST PER UNIT X NUMBER OF UNITS)

REVENUE = Selling price (per tonne) x output (tonnes of seed harvested per hectare)

FIXED COSTS = Are not being used within this activity

VARIABLE COSTS (cost per hectare) = Seed + herbicides + fungicides + trace elements + fertilisers + insecticides + compost + labour + tractor costs (fuel and maintenance)

So a 35 hectare field of oil seed rape on Button Farm....

REVENUE = £345 X 3.4 tonne x 35 hectares = £41055

VARIABLE COSTS = 35 hectares x (£94 + £62 + £57 + £2 + £139 + £9 + £144) = £5403

So, whilst continuing to ignore associated fixed costs, the field of rape on Button Farm produced a profit of £35652 last year.





- c) Each group will feed back their findings to the rest of the class, and the class as a whole will decide which field was the most profitable. The class will then need to decide whether they should plant every field with this crop and why this may or may not be a good idea. Suggested considerations are:
- i. The selling price of arable seeds fluctuates depending upon the demand and supply within the market
  - ii. The costs associated with growing each crop can also fluctuate due to market conditions
  - iii. The weather next year may vary considerably to last year and as some crops thrive in dry and others in wet conditions, this can have a big impact on the weight harvested.
  - iv. Each arable crop requires slightly different soil conditions, they may take or give different nutrients to the soil. By growing different crops in the field each year the Farmer is able to keep the soil healthy and provide the best conditions for growing. 'Crop rotation' as it is called also helps to prevent fields becoming too heavily infested by certain pests and diseases which are particularly attracted by certain crops. This makes it very unwise to continue to grow the same crop in the same field for very long.
- d) Whilst the Farmer can control what is planted in each field and how to help that crop grow there are many factors that can affect the success of a crop (and the farm) which he has no control over and students should recognise these and their likely impact. Suggested considerations are:
- i. The weather
  - ii. Legislation
  - iii. European subsidies
  - iv. Problems with machinery
  - v. Labour/skill shortages

The Host Farmer can at this point feed back to the class his thoughts on what he should grow next year and why he has made those decisions.

**SUMMARY: Class activity summarising what they have learnt. (10 - 20 mins)**

Measuring success on the farm: As a class, the students decide how they would measure whether the farm is a successful business. They may consider:

- i. Profit
- ii. Business assets and dividends
- iii. Growth (such as through diversifications, new acquisitions or increased output)
- iv. Survival (in particularly difficult conditions and/or despite market pressures)
- v. Quality of life for those working on the farm
- vi. Quality and quantity of produce
- vii. Diverse and abundant wildlife
- viii. Water quality of local streams





Ultimately, the class will need to answer the question:

Is it always possible to measure success?

#### NOTES:

**In a classroom environment the Button Farm data sheet can be used as a basis for the calculations to give students the opportunity to analyse the options available.** However, this activity is most effective when used on a farm. The Farmer is a perfect example of an entrepreneur and a valuable source of knowledge and experience. Students need to be able to consider the wider context of their decision making to achieve higher level marks and an interview with a Farmer, many of whom are operating within local, national, european and world markets is a valuable learning experience which cannot be matched by any text book.

This activity can be developed to consider:

- ❖ Cash flow – As income is irregular how can the cash flow be managed to ensure that costs can be covered?
- ❖ Budgets – How would setting a budget for expenditure and income help, and how practical would it be?
- ❖ Grants and Government schemes – does the farm qualify for support from the Government's Countryside Stewardship scheme which, for example, may make it more beneficial to install wider field margins to encourage wildlife and reduce its output per field?
- ❖ Evolving markets – Is it worthwhile trying new crops? The public demand for alternative crops such as rye and quinoa is increasing, but would they grow on the farm?
- ❖ Capital investments – is it possible to reduce the time taken by the tractor driver by purchasing a faster more efficient tractor?
- ❖ Growth – would the Farm benefit from purchasing a neighbours farm which has recently become available for sale?
- ❖ Diversification – are there any other income opportunities on the farm, such as holiday lets, or environmental schemes?

