



## Student Resource Sheet Carrs Factors Affecting Farming

### Farm profile

<b>Farmer:</b>	Mrs. Henderson
<b>Size:</b>	50 hectares
<b>Farm type:</b>	Upland beef and sheep farm
<b>Height:</b>	200 – 320m
<b>Annual rainfall:</b>	<750mm
<b>Livestock:</b>	Grazed with sheep and cattle from a neighbouring farm.
<b>Crops:</b>	Hay
<b>Wildlife interest:</b>	Hay meadows, pasture, woodland, wading birds

### Aims of the fieldwork

The aim of the fieldwork is to look at how physical factors vary on Carrs Farm.

### Soil fertility (pH)

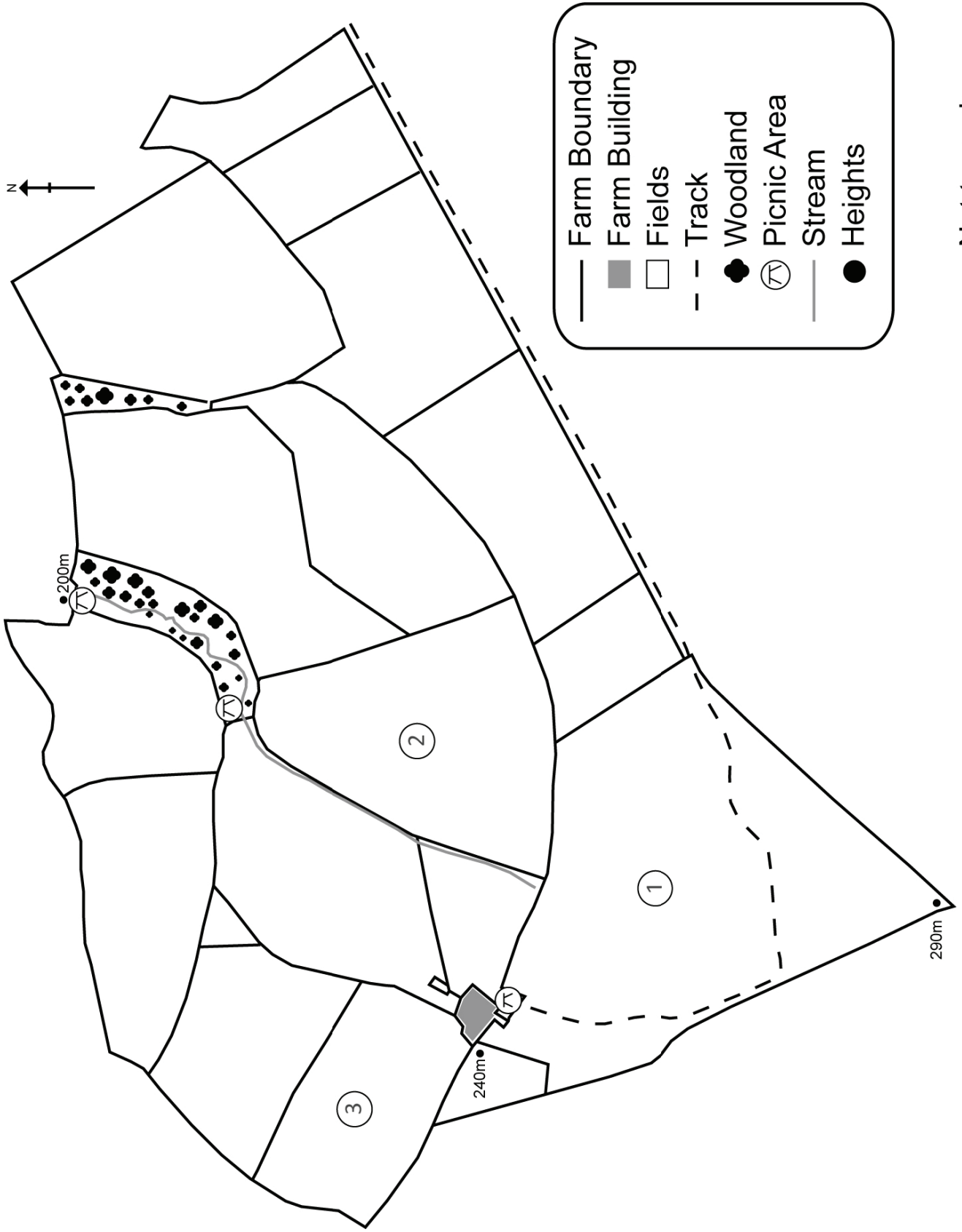
Field 1 (Allotment)	pH 5.4
Field 2 (Pasture)	pH 5.6
Field 3 (Hay meadow)	pH 5.6

### Soil texture test – ‘The Feel Test’

The field test to find the texture of soil is done by using the ‘feel’ technique. Feel the soil between your fingers – does it feel gritty or smooth? How much clay is in the soil? The best soil for grazing animals on will contain some sand, some silt and the highest percentage of clay.

### Soil Texture Table

Mineral in soil	‘Feel’ of soil
Sand	A gritty feel. When rubbed does not form a ball or leave a film on the fingers.
Silt	Smooth, silky or soapy feel.
Clay	<p>Plastic or sticky when wet. Gives a polished surface when rubbed. Rolls into a ball.</p> <p>The % of clay can be worked out by (add water if the soil is too dry):</p> <p><b>25% clay</b> – Soil forms ring with no breaks. <b>20% clay</b> – Soil leaves a smooth polished skin on fingers. <b>10 – 15% clay</b> – Soil can be rolled into rods or sausages. <b>5% clay</b> – Soil can be made into a cube.</p>



Not to scale

**Physical factors affecting farming – Table of results**

<b>Physical factors</b>	<i>Allotments</i>	<i>Pasture</i>	<i>Hay meadow</i>	<i>Land use capability class</i>
<i>Altitude</i>				
<i>Annual rainfall (mm)</i>				
<i>Drainage</i>				
<i>Vegetation description</i>				
<i>Slope angle (degrees)</i>				
<i>Soil depth (cm)</i>				
<i>Soil pH</i>				
<i>Soil texture and % clay</i>				

## Land Use capability

Having looked at a variety of physical factors it is possible to assess the potential of the land for the farmer to use. The table below shows how each factor sampled can be given a class score.

Land Use Capability Classes					
Class	<i>Altitude (m)</i>	<i>Wetness</i>	<i>Soil quality</i>	<i>Soil fertility (pH)</i>	<i>Slope (degrees)</i>
<b>1</b> <i>(High quality)</i>	Below 100	No limitations. Free drainage. Rainfall <750mm.	Deep soil 75cm+. Stone free. Loam texture.	7+ (neutral)	Level (Not above 3)
<b>2</b>	100 – 150	Imperfectly drained. Drainage easily modified.	Depth 50 – 75cm. Slightly stony.	6.0 – 6.5	Slight (Not above 7)
<b>3</b>	150 – 200	Some problems but possible to install some drainage system.	Depth 25 – 50cm. Stony – may be sandy or clayey texture.	5.5 – 6.0	Moderate (Not above 11)
<b>4</b>	200 – 350	Poorly drained but can be improved to maintain pasture.	Shallow <25cm. Very stony.	5.0	Significant (11 – 20)
<b>5</b> <i>(Low quality)</i>	Above 350	Poorly drained. Drainage Almost impossible to install	No humus. Very stony – skeletal soil only.	Under 4.5	Steep (Over 20)

For an overall classification, find the mean of the points score as in the following example:

Factor	Points score
Slope 2	1
Altitude 125m	2
Freely drained	1
Soil depth 50cm	2
PH 7 (neutral)	1
<b>Total score</b>	<b>7</b>
<b>Mean score 7/5 =</b>	<b>1.4</b>

For this example the average land class is 1, which is the best quality land.

Land use capability factor	'Allotment' Class score	Pasture Class score	Hay meadow Class score
<i>Altitude</i>			
<i>Wetness</i>			
<i>Soil quality</i>			
<i>Soil fertility</i>			
<i>Slope</i>			
<b>Total class score</b>			
<b>Mean class score</b>			