



**ACTION BASED ACTIVITIES**

# **TOPIC VN5 PLUMBING**

**THEME: EDUCATION & TRAINING**



**APPLICATION OF NUMBER**

**LEVELS 1 & 2**

**ISSUED SEPTEMBER 2006**

# INSTRUCTIONS

## WHAT DO I DO?

Use this Theme Template to help you:

- plan an Action-based Activity on the theme of Education and Training
- carry out an investigation into the subject
- produce evidence needed for your portfolio

**NOTE:** Use this booklet WITH your Learner's Planner & Guide.

## WHAT IS ASSESSED?

*Education and Training* is one of six themes you can choose for your Action-based Activity/portfolio work.

### TOPIC VN5 PLUMBING

If you are planning to start a project it is vital that you create a plan. This Template will take you step by step from getting started, to writing and checking your final pieces of work. Each step follows Part Two of your *Learner's Planner & Guide*, so read it alongside this Theme Template.



It's a good idea to follow this advice.



You must do this to get the qualification.



**STEP  
A**



### CHOOSING A TOPIC

One of the best ways to start thinking about a subject is to *mindmap*. You can find how to do this on Page 5 of the *Learner's Planner & Guide*.

#### TASK 1

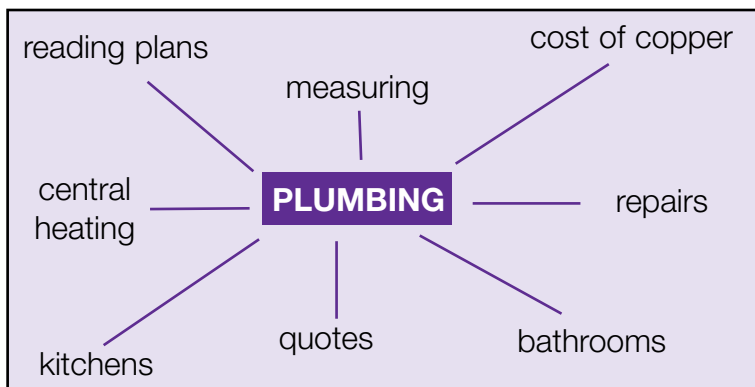
Allow about  
20 minutes

On your own, or with a colleague, think about and talk about "Plumbing" and aspects of it you might like to study.

Work together to make a **mindmap** of the subject. You may want to think about:

- a new-build project
- a second bathroom
- alterations
- reading plans
- researching home design
- investigating current trends

**PORTFOLIO EVIDENCE** – You could copy and add to the unfinished example below. This could then go into your portfolio as evidence that you have thought about your chosen subject.





*Continued*

**TASK 2**  
Allow about 15 minutes

When you have made your mindmap, focus in on one or two ideas that:

- interest you
- will be easy to research and get information about (talk to your tutor if you are unsure)

Write these ideas down and then try to turn them into **QUESTIONS**. This will help when you write up your conclusions later. The examples in the box may help you do this.



Topic : Plumbing	
Original Idea	Question
<b>Central heating</b>	How can I work out the cost of installing central heating?
<b>A second bathroom</b>	What is the best layout and how much will the materials cost?
<b>Comparing rates for jobs</b>	What is the average hourly cost for a plumber?
<b>Starting my own business</b>	How do I construct a business plan?

**TASK 3**  
Allow about 10 minutes

In your portfolio, write down your chosen title/question.

Check with your tutor that it is okay. Remember, you can always change it later if necessary.

**TASK 4**  
Allow about 30 minutes

**PLAN** – It's a good idea next to draw up a plan of action. Make a table and on it write down what you intend to do and when you will do it by. Highlight key dates and deadlines (e.g. when you are carrying out a survey or presenting your findings).



**STEP  
B**



### CHOOSING & INTERPRETING INFORMATION

Interpreting information from suitable sources is an essential part of the qualification and you must be able to show that you have collected, read and extracted information from **DIFFERENT** sources.

There are lots of ways of finding information on plumbing such as:

- books and other resources in the library
- DIY magazines, trade journals and newspapers
- using the Internet
- interviewing people

#### TASK 5

Allow about  
2-3 hours

Look for suitable documents to read. Remember:

- at **both Levels 1 and 2** you must use **TWO** different sources of information
- overall **at Level 1** at least one source must include a table, chart, graph or diagram
- **at Level 2** at least one source must include material containing a chart or a graph

You will need to make careful notes as you work. Put these in your portfolio (see also Pages 8 and 9 in the *Learner's Planner & Guide*)



#### Topic: "How can I work out the cost of installing central heating?"

**Title of book:** "A Building Craft Foundation"

**Date:** April 2006

**Author:** Peter Brett

**Chapter:** 3 Communications

#### Main points in the chapter

1. Using scales
2. Reading drawings and site plans

#### Additional evidence:

- location plans
- range and detail drawings
- price lists and information
- websites



**ASSESSMENT** Your tutor will assess that:

- you have chosen the information you need
- you have obtained the information needed
- you have identified the best methods to get the results you need

Remember to label sources clearly.

**STEP  
C**



**CARRY OUT AND CHECK CALCULATIONS**

Carrying out and checking calculations is an essential part of the qualification. At each level you are required to carry out calculations to do with:

	Level 1	Level 2
a. amounts/sizes	✓	✓
b. scales/proportion	✓	✓
c. handling statistics	✓	✓
d. using formulae		✓

It may be difficult to cover all the required calculations for this topic (See *Learner's Planner & Guide*, Page 10).

**TASK 6**

Allow about  
1 hour

**Carry out calculations.** You will need to:

- pick out the data/information you think will be useful
- decide on the calculations you need to find the results you want
- show calculation methods clearly
- check calculations and correct any errors

**At Level 2** calculations must involve two or more steps.

Talk this over with your tutor if you are at all unsure. A few ideas are given overleaf.

**CARRYING OUT AND CHECKING CALCULATIONS****Examples – Carrying out and checking calculations****At Level 1:**

- you must carry out calculations using data from a secondary source such as text books and trade journals containing tables, charts, diagrams or line graphs
- you might use information collected first hand as the basis of calculations (eg measuring)
  - a. costs, quantities, time
  - b. scale calculations for diagrams
  - c. range or average calculations

**At Level 2:**

- you must carry out calculations using data from a secondary source such as text books and trade journals containing charts or line graphs
- you might use information collected first hand as the basis of calculations (eg for volume)
- your calculations will be more complex, perhaps comparing costs from different suppliers or between two periods of time
  - a. volume of room, percentage discounts
  - b. scale calculations
  - c. comparison of averages
  - d. formula for volume, formula for VAT

**ASSESSMENT** Your tutor will assess:

- how well you carried out your calculations (including your working)
- that you checked your methods
- that you spotted and corrected any errors
- that your results make sense

**STEP  
D**



**TASK 7**

Allow about  
3 hours

**INTERPRETING RESULTS & PRESENTING FINDINGS**

Having collected, sorted, extracted data and carried out calculations based on them, you are now ready to interpret your findings.

1. Go through all the information you have collected and sort it out carefully. Keep only relevant information and make sure EVERYTHING is properly labelled.
2. Now sift through again and, on notepaper, write down your main findings and conclusions. Remember, your first question (Task 2)? Can you now answer your question?
3. How do the results of your calculations relate to the purpose of the Action-based Activity? (See Learner's Planner and Guide Page 12)
4. Think how you will present your findings.

**Remember:**

- at Level 1 you have to present your findings in **two** different ways using charts or diagrams
- at Level 2 you need to present your findings in **two** different ways using graphs, charts or diagrams
- comment on your graph, chart or diagram

**TASK 8**

Allow about  
3 hours



At this stage you will be required to present your findings to a tutor or supervisor. Before you hand your work in, check that:

- you have covered all requirements intended
- each section has suitable headings/labelling
- diagrams, charts, maps etc are properly labelled
- pages are numbered
- there is a contents page

**N.B. There is a checklist on Page 14 of the Learner's Planner and Guide**



It is a good idea to produce a draft plan/outline of what you will include in your final presentation. An example is given on the next page.

STEP  
D



## INTERPRETING RESULTS & PRESENTING FINDINGS *continued*

### EXAMPLE OF A DRAFT PRESENTATION PLAN

#### Topic: The cost of installing central heating

1. I will present my work as a **report** (computer typed and to include graphs, tables etc) with the sections below.
2. **Introduction** – I will include what I wanted to find out and why the subject interests me.
3. **Method** – a short section saying how I set about collecting data/information e.g. books and trade journals. Also used the Internet and architect's drawings.
4. **Calculations and Interpretation** – I will include how I calculated the measurements of the room and extracted information from the data collected; how I worked out best value for money.
5. **Presentation** – I will use written information and diagrams – mainly charts and graphs.
6. **Appendices** – to include some photocopied data from suppliers and Internet, which included prices.

I must remember to number pages and add a Contents page.



**ASSESSMENT** Your tutor will assess your work as follows:

**At Level 1** you will be assessed on:

- how you have interpreted the results of calculations
- suitable choice of chart or diagram with appropriate labels and correct use of units
- how you have explained what the chart or diagrams show

Additionally **at Level 2** you will be expected to:

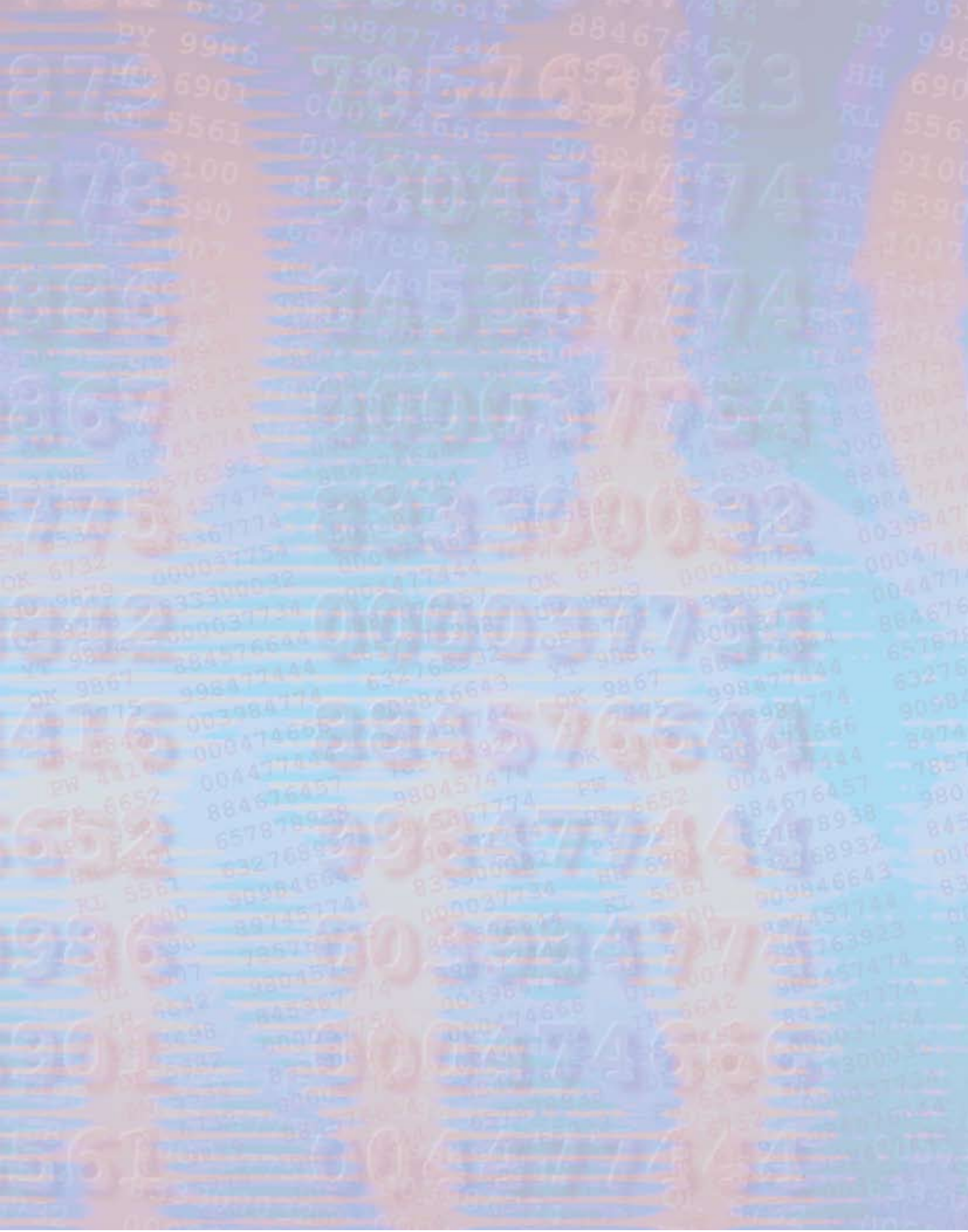
- describe the methods you have used
- explain the results of calculations in terms of how they meet the purpose of your chosen Activity



**PLUMBING  
MORE ACTION BASED ACTIVITY IDEAS**

1. Calculating the cost and potential savings of updating a central heating system.
2. Cost of refitting a kitchen including relocating pipework.
3. Carry out a survey to find out how people deal with plumbing problems and how much they are prepared to spend (an additional activity may be needed).
4. Compare the cost of copper over the past year to ten years ago (an additional activity may be needed).
5. Prepare a business plan and cash flow forecast for setting up your own business.





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