

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Wood Technology: Computer Aided Design

# Wood Technology

## Computer Aided Design

It is not necessary to carry out all the activities contained in this unit.

Please see *Teachers' Notes* for explanations, additional activities, and tips and suggestions.

|                        |   |
|------------------------|---|
| <b>Theme</b>           | <b>Computer Aided Design</b>  |
| <b>Levels</b>          | <b>A1 – B1</b>  |
| <b>Language focus</b>  | Key vocabulary, word identification, sentence structure, extracting information from text, writing text, grammar.   |
| <b>Learning focus</b>  | Using Wood Technology textbooks and accessing curriculum content and learning activities.   |
| <b>Activity types</b>  | Matching, word identification, structuring sentences and text, cloze, multiple choice, reading comprehension, categorising vocabulary, recording learning, developing a learning resource.  |
| <b>Acknowledgement</b> | <b>Extracts from <i>Wood Technology for the Junior Certificate</i>. Editor Bill Gaughran. Gill &amp; Macmillan.</b><br><br>We gratefully acknowledge Gill & Macmillan for the right to reproduce text in some of these activities.  |
| <b>Learning Record</b> | A copy of the Learning Record should be distributed to each student.<br><br>Students should:<br><ol style="list-style-type: none"><li>1. Write the subject and topic on the record.</li><li>2. Tick off/date the different statements as they complete activities.</li><li>3. Keep the record in their files along with the work produced for this unit.</li><li>4. Use this material to support mainstream subject learning.</li></ol> |

## Making the best use of these units

- **At the beginning of the class**, make sure that students understand **what** they are doing and **why**. *'We are doing the exercise on page (12) to help you to remember key words / to help your writing skills / to help with grammar'* etc.
- You can create your **personal teaching resource** by printing these units in full and filing them by subject in a large ring binder.
- **Encourage students** to:
  - Bring the relevant **subject textbooks** to language support class. It does not matter if they have different textbooks as the activities in these units refer to vocabulary and other items that will be found in all subject textbooks. These units are based on curriculum materials.
  - Take some **responsibility for their own learning** programmes by:



Developing a **personal dictionary** for different subjects, topics, and other categories of language, on an on-going basis. This prompt is a reminder.

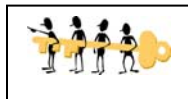


Recording what they have learnt on the **Learning Record**, which should be distributed at the start of each unit.



Keeping their own **files** with good examples of the work produced in language support for different subjects and topics. This file will be an invaluable **learning resource** in supporting mainstream learning.

- Don't forget that many of the activities in these units are suitable as **homework** tasks, for **self-study**, or for use in the **subject classroom** with the agreement of the subject teacher.



Indicates that answers may be found at the end of the unit.

## Keywords

The list of keywords for this unit is as follows:

### Nouns

bolt  
CAD (computer aided design)  
circle  
computer  
design  
disk  
drawings  
facility  
graphics  
grid  
hardware  
inch  
information  
layer  
library  
line  
memory  
mirror  
mm (millimetre)  
mouse  
nut  
object  
ordinate  
package  
pixels  
screen  
shading  
snap  
software  
stair  
surfaces  
system  
table  
tool  
zoom

### Adjectives

floppy  
repetitive

### Verbs

aid  
describe  
draw  
explain  
give  
make  
produce  
rotate  
suggest  
use  
write

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**Vocabulary file 1**

This activity may be done in language support class or in the mainstream subject classroom.

| <b>Word</b> | <b>Meaning</b> | <b>Word in my language</b> |
|-------------|----------------|----------------------------|
| screen      |                |                            |
| disk        |                |                            |
| graphics    |                |                            |
| hardware    |                |                            |
| software    |                |                            |
| memory      |                |                            |



Get your teacher to check this and then file it in your folder

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**Vocabulary file 2**

This activity may be done in language support class or in the mainstream subject classroom.

| <b>Word</b> | <b>Meaning</b> | <b>Word in my language</b> |
|-------------|----------------|----------------------------|
| zoom        |                |                            |
| mouse       |                |                            |
| nut         |                |                            |
| pixels      |                |                            |
| system      |                |                            |
| package     |                |                            |



Get your teacher to check this and then file it in your folder.

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## Wood Technology: Computer Aided Design

**Level:** all  
**Type of activity:** whole class

**Focus:** vocabulary, spelling,  
dictionary, writing  
**Suggested time:** 10 minutes

### Activating students' existing knowledge

Use a spidergram to activate students' ideas and knowledge on the key points in this chapter. See **Teachers' Notes** for suggestions.

Possible key terms for the spidergram:

#### Computers

#### Computer Graphics

#### Computer Games

- Invite students to provide key words in their own languages.
- Encourage dictionary use.
- Encourage students to organise their vocabulary into relevant categories (e.g. meaning, nouns, keywords, verbs etc.).



Students should record vocabulary and terms from the spidergram in their personal dictionaries.

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**Level:** A1

**Type of activity:** pairs or individual

**Focus:** vocabulary, spelling, dictionary

**Suggested time:** 20 minutes

**Working with word**

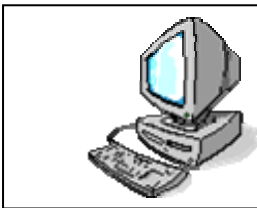


1. Identify the following in the picture:

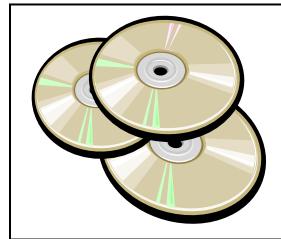


- a) the screen
- b) the mouse
- c) the keyboard

2. Match the word and the picture.



Software  
Hardware



3. Find these words in your textbook.

Write your own explanation for these words. Then write the word in your own language. Use your dictionary if necessary.

| Word               | Page in textbook | Explanation | In my language |
|--------------------|------------------|-------------|----------------|
| software           |                  |             |                |
| hardware           |                  |             |                |
| computer programme |                  |             |                |



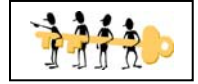
Check that these key words are in your personal dictionary.

Level: A1

Type of activity: pairs or individual

Focus: vocabulary, sentence structure

Suggested time: 30 minutes



## Picture Sentences

### 1. Tick the correct answer

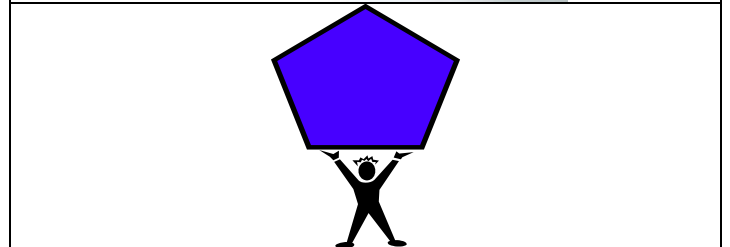
- a) This is a two dimensional shape.
- b) This is a grid.
- c) This is a three dimensional shape.



- a) This is a two dimensional shape.
- b) This is a grid.
- c) This is a three dimensional shape



- a) This is a two dimensional shape.
- b) This is a grid.
- c) This is a three dimensional shape



### 2. Put these words in the correct order to form sentences.

by using /is about/ computer graphics/ creating pictures/ a computer

---

CAD/ is speed/ big advantage/ one/ of

---

excellent/CAD programmes/ many /are available

---



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

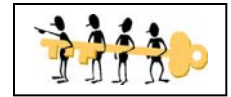
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Level: A1/A2

Type of activity: pairs or individual

Focus: word identification, vocabulary

Suggested time: 20 minutes



### Odd One Out

1. Circle the word which does not fit with the other words in each line.

Example: *apple orange banana taxi*

computer                  mouse                  screen                  dog

hardware                  memory                  ice cream                  software

circle                  bog                  lines                  graphics

bread                  snap                  zoom                  grid

2. Find these words in your textbook. Then put them in short sentences in your own words. Use a dictionary if necessary.

to edit \_\_\_\_\_

to erase \_\_\_\_\_

to trim \_\_\_\_\_

to copy \_\_\_\_\_

to zoom \_\_\_\_\_



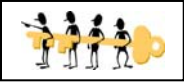
Check that these key words are in your personal dictionary.

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**Level:** A2 / B1  
**Type of activity:** individual

**Focus:** key vocabulary  
**Suggested time:** 20 minutes



**Keywords**

1. Fill in the missing letters of the keywords listed below.  
On the line beside each word, write whether the word is a noun, an adjective or a verb.

gra\_ \_ics \_\_\_\_\_

s\_ \_ tw\_ \_e \_\_\_\_\_

in\_ \_rm\_ \_ion \_\_\_\_\_

rep\_ \_it\_ \_ve \_\_\_\_\_

2. Write as many words as possible related to **Computer Aided Design**. You have 3 minutes!

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Check that these key words are in your personal dictionary.

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Level: A1 / A2

Type of activity: pairs or individual

Focus: key vocabulary, spelling

Suggested time: 20 minutes



### Unscramble the letters

1. This is something you do again and again VEITPERETI

**Answer** \_\_\_\_\_

2. This is a place where books are stored RALYRIB

**Answer** \_\_\_\_\_

3. This is an organised way of doing a particular job SEMSTY

**Answer** \_\_\_\_\_

4. When you talk about something in detail SDECBERI

**Answer** \_\_\_\_\_

### Solve the secret code

|         |   |   |   |   |   |   |   |   |   |   |   |   |
|---------|---|---|---|---|---|---|---|---|---|---|---|---|
| English | A | C | E | F | L | M | O | P | R | S | T | U |
| Code    | B | X | Y | N | G | Q | Z | H | V | I | D | W |

ex: IDBVD = START

**XZQHWYDI BVY WIYNWG =**

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## Wood Technology: Computer Aided Design

**Level:** A2 / B1

**Type of activity:** pairs or individual

**Focus:** reading comprehension, extracting meaning from text, vocabulary

**Suggested time:** 30 minutes



### Completing sentences

Fill in the blanks in these sentences. Use words from the Word Box below.

Remember that while the computer is a very powerful design/drafting tool, it is not a substitute for sketching initial \_\_\_\_\_ ideas, and it definitely does not think for you. As the software and \_\_\_\_\_ continue to develop, harness them to suit your needs. Why not try to use a CAD package in your school to \_\_\_\_\_ some of the drawings for your project briefs? A drawing produced by \_\_\_\_\_ will always look neat and tidy. You could use it for the presentation of ideas, for working \_\_\_\_\_, for drawing charts, etc.

Remember to be patient at first: proficiency comes only with lots of practice.

*Word Box:*

|         |          |          |        |          |
|---------|----------|----------|--------|----------|
| produce | drawings | computer | design | hardware |
|---------|----------|----------|--------|----------|

Check your understanding by answering the following questions:

- Can a computer help you to think?
- How can you improve at computer design?

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## Wood Technology: Computer Aided Design

**Level:** A2 / B1

**Type of activity:** individual

**Focus:** key vocabulary, topic information, reading comprehension, multiple choice  
**Suggested time:** 40 minutes



### Multiple choice

*Read the text below and choose the best answers.*

Anything that can be drawn by hand can be drawn faster and more accurately on a computer. The graphics produced will have a uniformly neat and precise appearance, regardless of who made them. Lines that should be parallel, will be exactly so, corners will be exactly square, lines will meet exactly. Drawings will be accurate in another sense: with respect to distance. If, for example, you wish to draw a line 100 mm long on a drawing board you may be accurate to  $\pm 0.25$  mm. The computer's accuracy will be  $\pm 0.01$  mm.

Tone of line in any drawing is very important. If construction lines are light, outlines heavy, and dimensions somewhere in between, the finished drawing will have more impact. Any drawing lacking such line tone will be confusing and untidy. We cannot vary line tone on a computer screen, but we can use colour (up to 256 colours on some screens). For example, an unobtrusive colour like yellow could be used for construction lines, while black could be used for outlines.

1. What is the appearance of computer graphics?

- |                     |           |
|---------------------|-----------|
| a) invisible        | b) pretty |
| c) neat and precise | d) sloppy |

2. How do computers represent distances?

- |                  |                    |
|------------------|--------------------|
| a) they don't    | b) respectfully    |
| c) approximately | d) very accurately |

3. What happens to a drawing if it lacks line tone?

- |                       |                         |
|-----------------------|-------------------------|
| a) it is confusing    | b) it is more important |
| c) it has more impact | d) it is heavy          |

4. Can you vary line tone on a computer screen?

- |        |       |
|--------|-------|
| a) Yes | b) No |
|--------|-------|

5. Is yellow a good colour for construction lines on a computer?

- |        |       |
|--------|-------|
| a) Yes | b) No |
|--------|-------|

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## Wood Technology: Computer Aided Design

**Level:** B1  
**Type of activity:** individual

**Focus:** prepositions, sentence structure  
**Suggested time:** 30 minutes

### Grammar point



#### Prepositions

(Preposition: a word placed before a noun to show direction, place, time etc.):

1. Put a circle around all prepositions in the box below (clue - there are 15!):

|          |          |    |
|----------|----------|----|
| computer | on       |    |
| off      | software |    |
|          | at       | in |
| through  |          |    |
| hardware | up       |    |
| screen   |          |    |

2. Here are sentences from your textbook, but some of the prepositions are missing. Read the sentences and fill in the missing prepositions.

- The grid can be turned \_\_\_\_, or left \_\_\_\_.
- When the grid is \_\_\_\_ on it will appear as a series of dots \_\_\_\_ the screen.

- Often the snap is set \_\_\_\_ the same intervals as the grid.
- Line: This allows lines \_\_\_\_ various length, thickness and angle to be drawn.
- Circle: Most systems allow you to draw a circle \_\_\_\_ the radius.
- Arc: Arcs may be drawn from one of the following pieces \_\_\_\_ information.
- Zoom: When doing a drawing it is a good idea to zoom \_\_\_\_ to the object.

3. Now it's your turn! Go to your textbook and the unit on CAD. Write out six sentences but leave a gap where the prepositions should be. Swap sentences with another student and correct one another's work.

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## Alphaboxes

Using your textbook, find **one** word beginning with each of the letters of the alphabet. Write the word in the relevant box. You could also write the word in your own language.

|   |   |     |
|---|---|-----|
| a | b | c   |
| d | e | f   |
| g | h | i   |
| j | k | l   |
| m | n | o   |
| p | q | r   |
| s | t | u   |
| v | w | xyz |

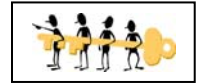
Do you understand all these words?



Get your teacher to check this, then file it in your folder so you can use it in the future.

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Word search

Find the words from the list below. When you have found all the words, write each word in your own language.

E R  
 A C A D  
 M E M O R Y  
 G R A P H I C S  
 F A C I L I T Y I B  
 E F H A R D W A R E O Z  
 C I R C L E E S H A D I N G  
 S C R E E N C O M P U T E R S X  
 R O T A T E S M T T M D R A W I N G  
 P X M O U S E I O R D I N A T E B O L T  
 D I S K M I L L I M E T R E X S N A P X  
 N D M S P R O D U C E T O O L G S C  
 X L I N E S S Y S T E M V N X W  
 U G M K O B J E C T S L W I  
 R B M I R R O R N U T Y  
 J A S U R F A C E S  
 S O F T W A R E  
 B Z O O M E  
 G J L Z  
 Y A

|           |            |          |          |
|-----------|------------|----------|----------|
| BOLT      | FACILITY   | MIRROR   | SHADING  |
| CAD       | GRAPHICS   | MOUSE    | SNAP     |
| CIRCLE    | HARDWARE   | NUT      | SOFTWARE |
| COMPUTERS | LINES      | OBJECTS  | SURFACES |
| DISK      | MEMORY     | ORDINATE | SYSTEM   |
| DRAWING   | MILLIMETRE | PRODUCE  | TOOL     |
|           |            | ROTATE   | ZOOM     |
|           |            | SCREEN   |          |



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**Play Snap**

Make Snap cards with 2 sets of the same keywords. *See Notes for teachers* for ideas about how to use the cards.



|                 |                 |
|-----------------|-----------------|
| <b>mirror</b>   | <b>mirror</b>   |
| <b>design</b>   | <b>design</b>   |
| <b>computer</b> | <b>computer</b> |

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|                    |                    |
|--------------------|--------------------|
| <b>pixels</b>      | <b>pixels</b>      |
| <b>information</b> | <b>information</b> |
| <b>hardware</b>    | <b>hardware</b>    |

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|                 |                 |
|-----------------|-----------------|
| <b>disk</b>     | <b>disk</b>     |
| <b>produced</b> | <b>produced</b> |
| <b>shading</b>  | <b>shading</b>  |

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|                   |                   |
|-------------------|-------------------|
| <b>repetitive</b> | <b>repetitive</b> |
| <b>screen</b>     | <b>screen</b>     |
| <b>explain</b>    | <b>explain</b>    |

## Answer key

### Working with words, page 7

2. hardware is the first picture, software is the second.

### Picture sentences, page 8

1. b,c,a

2. Computer graphics is about creating pictures by using a computer.

One big advantage of CAD is speed.

Many excellent CAD programmes are available.

### Odd one out, page 9

1. dog, ice-cream, bog, bread

### Keywords, page 10

Graphics (noun), software (noun) information (noun) repetitive (adjective)

### Unscramble the letters, page 11

Repetitive, library, system, describe.

Secret Code: computers are useful

### Completing Sentences, page 12

Remember that while the computer is a very powerful design/drafting tool, it is not a substitute for sketching initial **design** ideas, and it definitely does not think for you. As the software and **hardware** continue to develop, harness them to suit your needs. Why not try to use a CAD package in your school to **produce** some of the drawings for your project briefs? A drawing produced by **computer** will always look neat and tidy. You could use it for the presentation of ideas, for working **drawings**, for drawing charts, etc.

Remember to be patient at first: proficiency comes only with lots of practice

No, a computer does not think for you.

You can improve by having lots of practice.

### Multiple Choice, page 13

1.c,2.d,3.a,4.b,5.a

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## Wood Technology: Computer Aided Design

### Grammar point, page 14

1. Prepositions: on, off, at, in, through, up, down, beside, under, over, from, of, opposite, near, along

2.

- The grid can be turned **on**, or left **off**.
- When the grid is **on** it will appear as a series of dots **on** the screen.
- Often the snap is set **at** the same intervals as the grid.
- Line: This allows lines **of** various length, thickness and angle to be drawn.
- Circle: Most systems allow you to draw a circle **from** the radius.
- Arc: Arcs may be drawn from one of the following pieces of information.
- Zoom: When doing a drawing it is a good idea to zoom **in** to the object.

### Word Search, page 16

E R  
A C A D  
M E M O R Y  
G R A P H I C S  
F A C I L I T Y I B  
E F H A R D W A R E O Z  
C I R C L E E S H A D I N G  
S C R E E N C O M P U T E R S X  
R O T A T E S M T T M D R A W I N G  
P X M O U S E I O R D I N A T E B O L T  
D I S K M I L L I M E T R E X S N A P X  
N D M S P R O D U C E T O O L G S C  
X L I N E S S Y S T E M V N X W  
U G M K O B J E C T S L W I  
R B M I R R O R N U T Y  
J A S U R F A C E S  
S O F T W A R E  
B Z O O M E  
G J L Z  
Y A