

Designed for: Year 10

Sub-strand(s): Learning to learn, work studies, career development & management

Instructions for students: Students should save this file to their desktop and open it using Adobe Acrobat Reader in order to save the content.

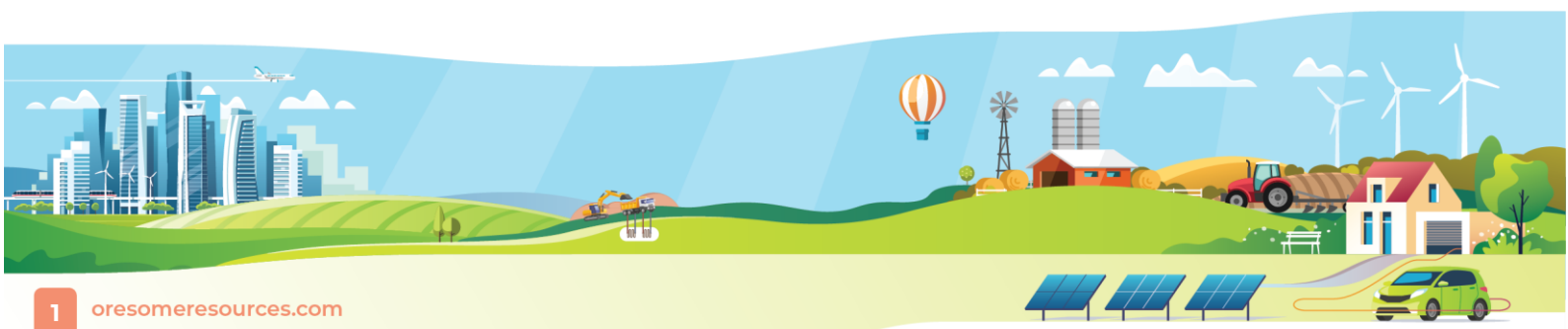
Descriptor: Obtaining an acceptable level of applied reading can greatly improve many factors in life, including operating safely and competently in the workplace and in regard to career prospects. First impressions count and applications with written errors will be eliminated at the initial cut.

Applied reading alongside skills such as legible handwriting, correct spelling and sentence structure are essential to performing successfully in work environments.

For example placing inaccurate orders for supplies have the potential to add extra costs to the business if goods have to be returned and replaced.

In addition, Workplace Health and Safety (WHS) standards can be compromised unless strict protocols are observed e.g. reading and understanding WHS requirements and instructions for jobs. Employers can be exposed to unnecessary risks in terms of complaints about the quality/accuracy of the job or indeed workplace injury.

Intent: The following resources may be used as a mini-unit on the topic indicated above with some additional scaffolding, structure and differentiation for each individual classroom, or can be used as stand-alone resources to assist with providing the minerals and energy context within the designated content descriptors.



Applied Reading Exercises

Question 1:

Read the following extract and answer the following questions with reference to a drift punch.

A drift punch is used by maintenance personnel such as diesel mechanics, plant mechanics and heavy diesel fitters with a hammer or a press to remove pins, bushes, valve guides and sleeves or to fit bearings, seals and bushes that you don't wish to damage when maintaining the equipment.

They can be made from mild steel, brass, copper and aluminium rod (the body). It is reduced in diameter at one end to provide a tip and chamfered at the end to form the head. Some drifts are made from two metals.

The body can sometimes be made from a harder metal than the tip, i.e. a mild steel body with a copper tip.

A multi-purpose drift has several stepped diameters at its tip and the body is knurled.

1. Name the three metals that are used to make the body of the drift.

2. Why is the diameter of the drift reduced at one end?

3. Why do some drifts have copper tips?

4. Name two uses for a multipurpose drift.

5. What is a drift and what is it used for?



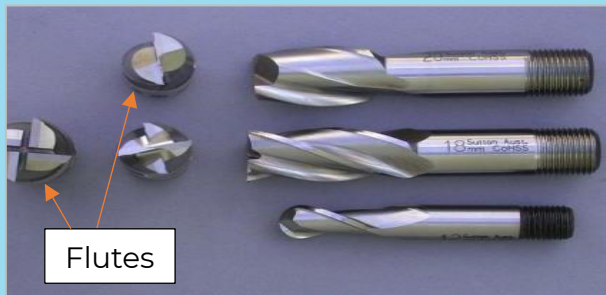
Question 2:

Read the following extract and answer the following questions with reference to the milling process.

Milling is the process of machining using rotary cutters to remove material by moving a cutter into the work piece. This may be done by varying directions on one or several axis. Milling covers a wide variety of operations and machines, on jobs from small individual parts to large milling operations. It is one of the most commonly used processes for machining. Used by maintenance personnel such as HD Fitters and machinists in the resource sector.



Axial depth of cut



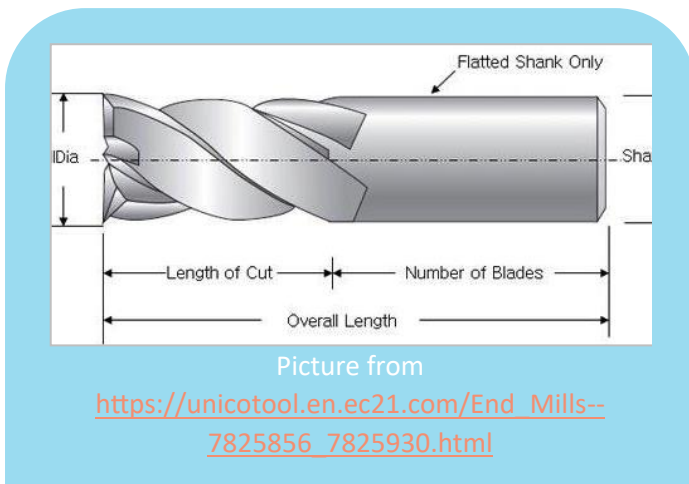
Picture from Wikipedia, the free encyclopedia

What are end mills: End milling is the most versatile form of milling that can be used to machine flat surfaces, drilling holes into a workpiece, profiling, contouring, slotting, counterboring. They are designed with cutting teeth on the face and edge of the body and can be used to cut a variety of different materials. End mills cannot be axially fed.

End milling cutters: Shank-type end mills (pictured) are made in a range of sizes starting at 3mm diameter and are available in long or short sizes to allow for various cutting depths. The number of teeth varies from two on the smallest to eight on the largest types. The teeth have a 30° right-hand spiral.



Shell-end mills are other cutters available that cover a larger diameter from 32mm to 150mm and are used mainly for facing larger surfaces and allow machining up to the shoulders on jobs. Shanks that are parallel are held in a Clarkson Auto type chuck or collets. End mills cannot be axially fed. Morse taper shanks are also available but are less common.



A range of three flute-end mills to 38mm diameter is available, which have a centre cutting tooth enabling axial feed.

1. How many teeth does the largest shank type end mill have?

☐ 2
 ☐ 4
 ☐ 3
 ☐ 8

2. How must you not feed an end mill?

☐ Vertically
 ☐ Axially
 ☐ Straight
 ☐ Horizontally

3. Three flute end mills have a

☐ centre cutting tool
☐ number of teeth
☐ right-hand spiral 30° right-
☐ hand spiral

That enables them to be fed axially.



4. In what range of sizes are shell end mills available?

- ☐ 3 – 38mm
☐ 32 – 150mm
☐ 3 – 30mm
☐ 32 – 38mm

5. What does axial mean?

- ☐ The cutter spins
☐ Tool engages a workpiece along its centreline
☐ Directed to outward from a centre
☐ Along or parallel to the axis of a body

Question 3

For each of the following groupings, select the odd one out (a, b, c, d or e)

a ☐

heavy

b ☐

big

c ☐

giant

d ☐

minor

e ☐

large

a ☐

two

b ☐

four

c ☐

three

d ☐

six

e ☐

eight

a ☐

m

b ☐

mm

c ☐

oz

d ☐

km

e ☐

cm

a ☐

angle

b ☐

vertex

c ☐

line

d ☐

circle

e ☐

axis

a ☐

clang

b ☐

hush

c ☐

jingle

d ☐

creak

e ☐

rustle

a ☐

nuisance

b ☐

disturbance

c ☐

serene

d ☐

commotion

e ☐

confusion



Question 4

Choose the correctly spelt word to complete these sentences. Select the correct answer (a, b, c, d or e)

The vehicle's _____ gauge was faulty.

- a fule ☐ b feul ☐ c fuel ☐ d fewel ☐

A scribe was used to mark the _____ line on the box

- a center ☐ b senter ☐ c centar ☐ d centre ☐

Vernier calipers are used to measure the _____ of the pipe.

- a dimeter ☐ b diaeter ☐ c diametre ☐ d diometer ☐

Diesel Fitting is an _____ trade

- a ingeening ☐ b inginering ☐ c engineering ☐ d enginering ☐

