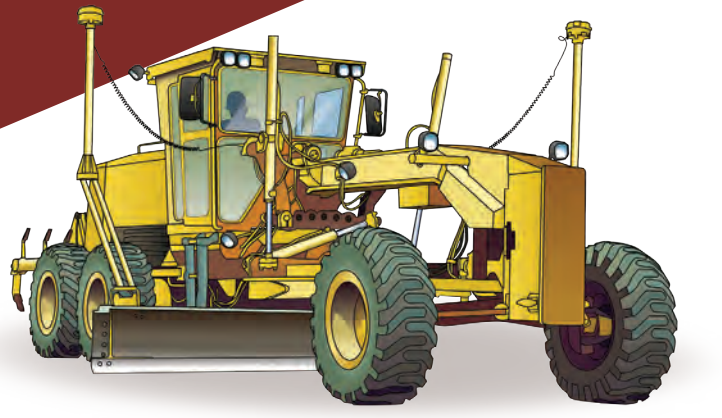
Trainer Value Pack

LEARNER GUIDE

LLN READY



Grader TICKET

Training support material for:

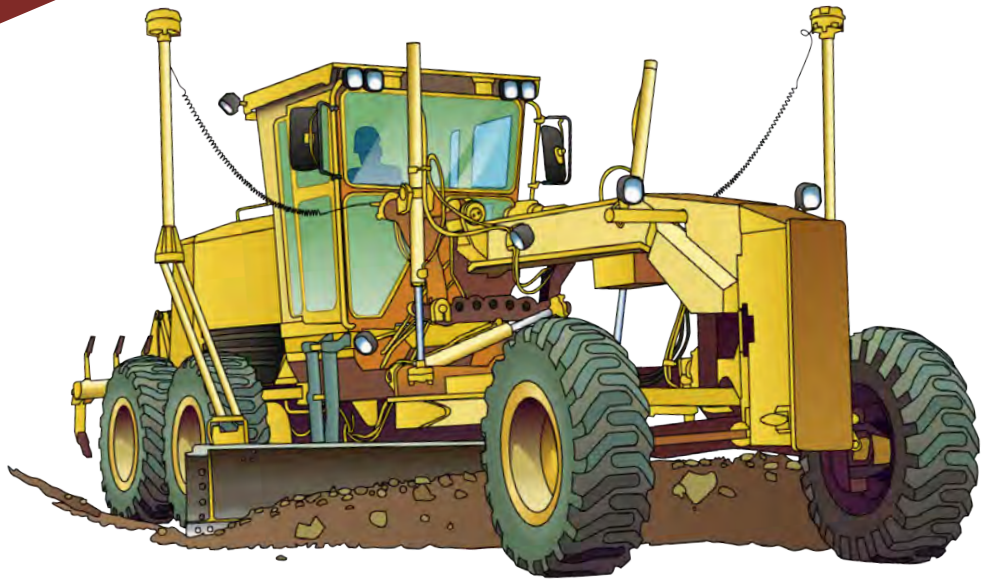
RIIMPO324F
Conduct civil construction grader operations

Produced by:

EASY GUIDES
Australia Pty Ltd

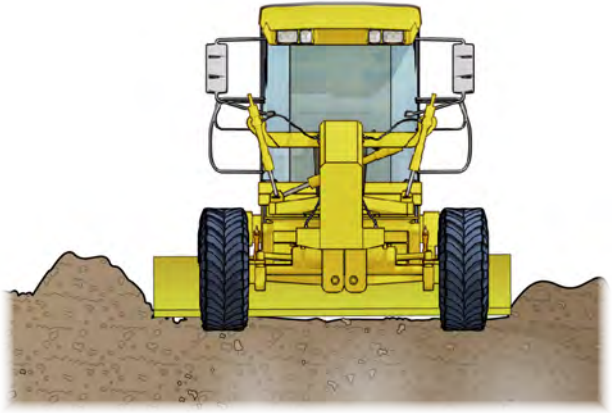
Contents

Introduction to Grader



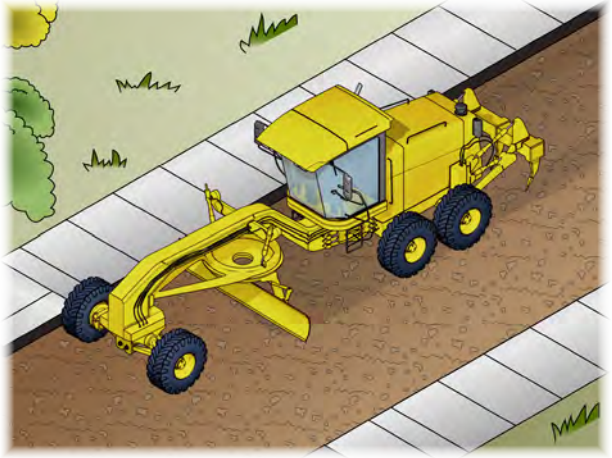
Introduction to grader

- A grader is a self-propelled articulating or rigid framed wheeled machine, designed to cut, move and place construction materials using a centrally mounted blade and may include forward and/or rear mounted rippers/scarifiers.
- The blade and attachment controls are normally hydraulic; however, they may be mechanical.

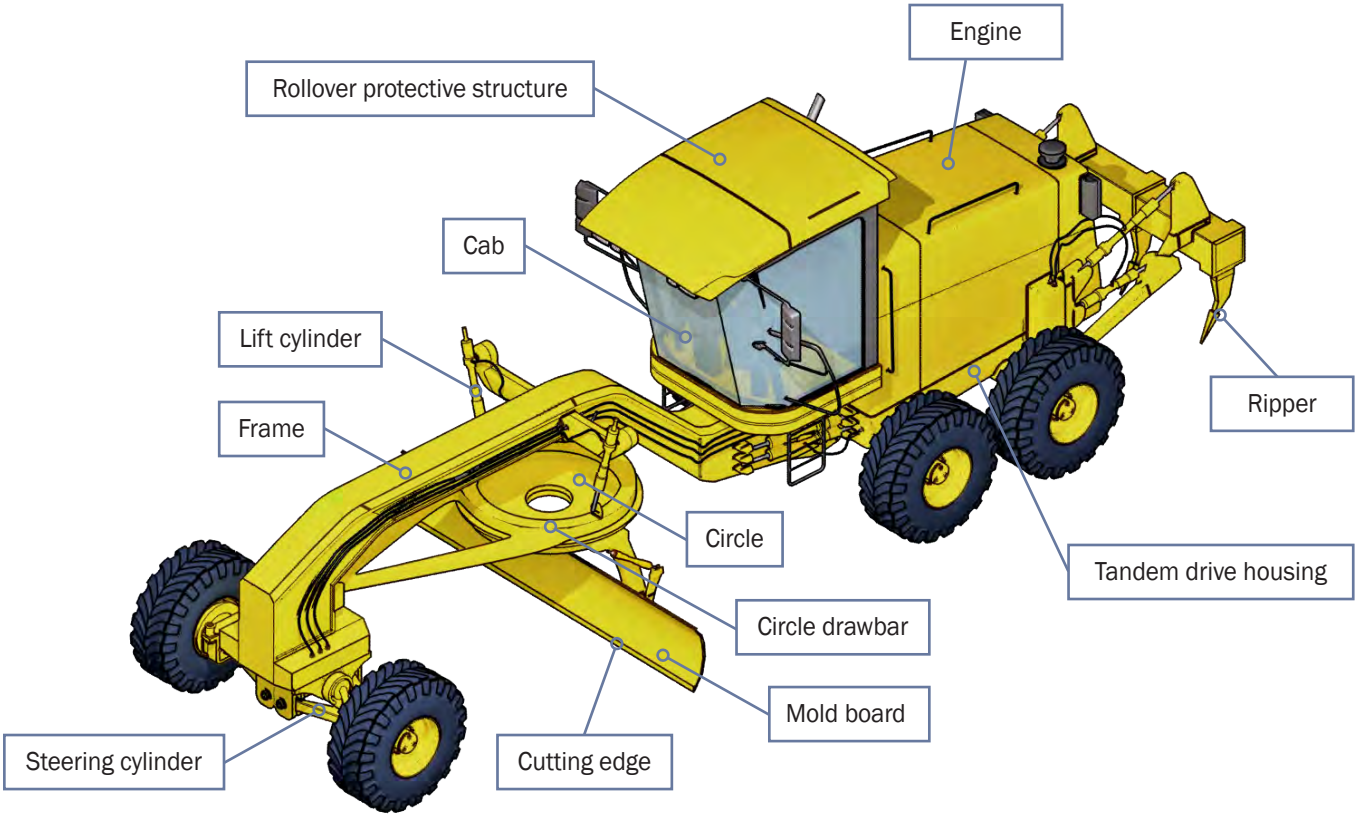


What industries do you use a grader in?

- Civil construction



An example of a grader



General information

The basics of road construction

A surveyor will stake out the site according to the site plan. The stakes mark where the road will go and any drains or pits, which will help to drain water away from the road area.

An excavator or dozer removes the trees, shrubs and other plants and levels the area. Some trees may be protected with padding or fencing.

Sometimes contractors may use a borrow pit (also called a sand box). A borrow pit is an area where soil, sand or gravel (material) is dug out to be used in another area. Sometimes the borrow pit will become the drains, or water catchment areas at the end of the work.

The excavator or dozer may use material from the borrow pit to build up low areas in the road. They may also build up diversion blocks. Diversion blocks divert water away from the road and into drains.

The basics of road construction (continued)

As the operator shapes the ground, they will usually create drainage at the sides of the road area. They will also make sure there is enough fall (scope) on the road so that water drains away from the road.

Drains are installed to help take water away from the worksite.

A front end loader or dozer shapes the road base. This helps smooth out the surface ready for grading.

A water truck may wet down the ground. This helps the soil to bond.

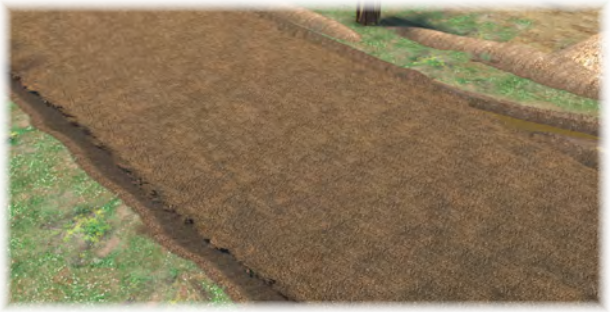
The basics of road construction (continued)

The grader grades the road to produce a much smoother surface.

A roller or compactor then compacts the road. This breaks up lumps and smooths the surface out.

A site supervisor or roller operator tests the compaction. Sometimes they will use a deflectometer or penetrometer. Some rollers/compactors can test the compaction as they drive.

Many layers of the ground material are built up. This is called the subgrade. Each layer is compacted and tested.



The basics of road construction (continued)

Trucks then deliver subbase. Haul trucks or tip trucks sometimes tip the subbase, and front end loaders spread it.

A water truck may spray water on the subbase to help the soil bond. This makes the particles stick together and make it compact better.

Several layers of subbase are laid. The subbase is compacted and tested.

Once the subbase is at the right thickness and is compacted properly, trucks deliver the course road base. The road base is built up in many layers. Water trucks may wet down the road base if it helps the roller/compactor compact the base.

The basics of road construction (continued)

When the road base is thick enough, and is compacted properly, the road is finished.

If asphalt is being laid, more layers will go on top of the road base. There will be an asphalt base course, then a binder course, and finally, a surface course.

Finally the planting, erosion control and drainage work is completed.

Operating techniques

Building a stockpile

A stockpile is a pile of material (soil, sand, rock, etc) that you use for earthmoving work. You must choose a good location for your stockpile. If you choose the wrong location, your stockpile could get washed away or become dirty (mixed with other materials).

If you can, choose an area of well drained, firm level ground.

You should set up drainage so that rainwater does not cause the stockpile to wash away or slide.

Make sure the stockpile is close to the area you are working. You don't want to drive too far to work with the stockpile.

Make sure you have clear access to the stockpile.

Building a stockpile (continued)

Clear the area of any rubbish or debris, so it doesn't get mixed in the stockpile.

When you fill out a stockpile, start by filling the area closest to the back of the stockpile area.

Don't work too close to the edge of the stockpile as it could give way.

Keep filling out the stockpile one row at a time or by dozing material to the correct position on the stockpile.

Operating techniques

Taking from a stockpile

When you take from a stockpile, try and work neatly.

Take from the top, working down in layers.

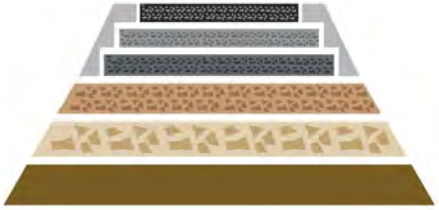
Do not undercut the stockpile. It might collapse on you.

You may need to maintain the stockpile by neatening it up.

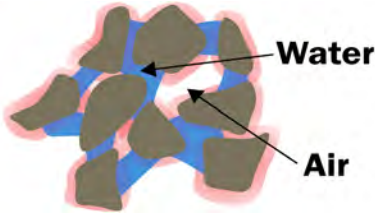
To do this, you push material up that has been spread out. Keep the loading area clean and level.

Principles of soil technology for civil works

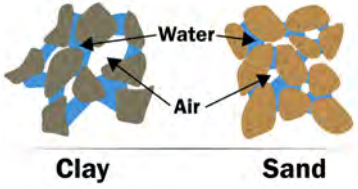
One of the most important jobs you will do, as a machine operator, is to help lay foundations. Foundations are the base for roads, railway lines, swimming pools and buildings. If you do not have a solid foundation, you cannot build something solid on top of it.



In civil construction, moisture content means how much water is in a soil, rock, aggregate or road base. Moisture is very important in earthmoving. Moisture affects the weight of soils. It makes soils swell, and it also affects the handling properties of the soil. Handling properties means how easy or hard it is to work with that soil.



All soils usually contain moisture. How much moisture the soil has depends on many things. The weather, drainage, and the soil's ability to hold water all affect the moisture in a soil. Retention properties mean how much water a soil can hold. Different soils can hold different amounts of water. Sometimes you can treat a soil to change its moisture content. To do this you mix a chemical with the soil.



Different types of soils can cause problems with foundations. Wet, boggy soil can cause foundations to sink. That is why it is important to make sure water can run or drain from the site. It is also important that the foundation is built up to the right level. You can sometimes treat wet boggy soil with lime. Lime helps dry out the soil, and helps it 'clump' together.

Principles of soil technology for civil works (continued)

Clay soils can also cause problems under foundations. This is because clay attracts water. When this happens, the clay expands and swells. Later, when it is hot and sunny, the water dries up and the clay cracks.

Over time, this swelling (expanding) and cracking (while shrinking) can warp your foundations. This can cause cracks and potholes in roads, cracked walls or ceilings in buildings, or swimming pools to crack and leak.

You can treat clay soils with chemicals that stop clay from attracting water. Once you treat the clay, you can compact it. This makes a much better foundation that won't swell and crack as much.

Before you use any chemicals, you must make sure they are safe. Check the safety data sheet (SDS) to find out how to safely use, store and handle the chemical. Check the site's environmental management plan. If you are not sure about using a chemical, talk to your site supervisor.

Notes

Plan and prepare for work

Chapter 1

Work Health & Safety Legislative Requirements

'Laws to keep your workplace safe'

WHS/OHS requirements are outlined in Acts, Regulations, Codes of Practice and Australian Standards.

WHS/OHS Acts

'WHS/OHS Acts' are laws that explain how to improve health and safety in the workplace.
For example: Model National WHS Act.
WHS has the same meaning as OHS in this document.

Regulations

'Regulations' explain specific parts of the Act.
For example: Part 4.3 – Confined spaces, Part 4.4 – Falls.

Codes of Practice/Compliance Codes

'Codes of Practice' are practical guidelines on how to comply with (meet the rules of) legislation.
For example: HAZARDOUS MANUAL TASKS Code of Practice.

Australian Standards

'Australian Standards' are work guidelines that set the minimum accepted performance or quality for a specific hazard, process or product.

For example: AS 2550 – Cranes, hoists and winches – safe use set.

Where to find WHS information

You can check these websites for more information about workplace health and safety.

NT WorkSafe
www.worksafe.nt.gov.au

WA WorkSafe
www.commerce.wa.gov.au/WorkSafe

SA SafeWork
www.safework.sa.gov.au

QLD Workplace Health and Safety
www.justice.qld.gov.au

NSW WorkCover
www.workcover.nsw.gov.au

ACT WorkCover
www.worksafe.act.gov.au

VIC WorkSafe
www.worksafe.vic.gov.au

TAS WorkSafe
www.worksafe.tas.gov.au/home

You can read more about the new WHS Act at www.safeworkaustralia.gov.au

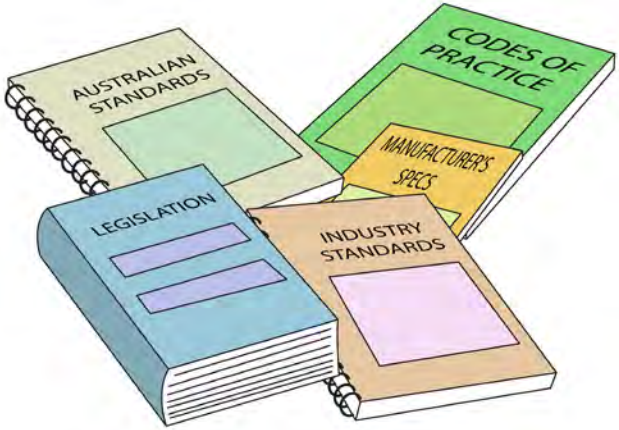
QUESTION 1

What are the National Work Health (WHS) and Occupational Health and Safety (OHS) Acts about?

The Acts explain how to keep your workplace **safe** and **healthy**. They explain what you need to do to meet your duty of care.

For example:

You must make sure you do earthmoving work in a way that won't put yourself or others at risk. You must use earthmoving equipment according to instructions.



Note:
Check your state requirements as Acts may vary from state to state

QUESTION 2

What are some examples of documentation you should read before doing earthmoving work?

- WHS/OHS Act
- Regulations
- Codes of Practice
- Australian Standards (AS 2958 Earthmoving machinery)
- Manufacturer's specifications
- Operator's manual for your machine
- Site requirements and procedures
- Company policies and procedures for Employment and workplace relations, Equal opportunity and disability.

QUESTION 3

Why should you check the operator's manual before using earthmoving equipment?

The operator's manual tells you how to operate your machine.

The manual also tells you about maintenance (how to keep your machine working well).

GRADER

Learner Workbook

(Formative assessment)

TRAINER'S MARKING GUIDE

RIIMPO324F –
Conduct civil construction grader operations

Learner Name: _____

Student Number: _____ **Date:** _____

This resource was developed by:

EASY GUIDES Australia Pty Ltd

PROUDLY PRINTED IN AUSTRALIA

Contents

Knowledge Assessment - Introduction

The assessor must be satisfied the candidate has successfully demonstrated each element and performance criteria contained in the Unit of Competency.

Knowledge Assessment Instructions

1. This assessment should be completed in writing (pen not pencil). However, where necessary it may be undertaken verbally. If verbal assessment is undertaken the candidates' responses must be clearly recorded by the assessor. The assessor must clearly note on the assessment that it was undertaken verbally.

2. Candidates should be allowed 10 minutes reading time before commencing the assessment and a further 180 minutes to complete the assessment.

3. The assessment should be completed in a quiet area free from distraction.

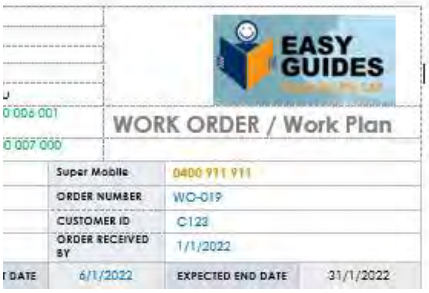
4. The assessment is to be completed without the assistance of learning resources. Students may ask the assessor for assistance to clarify questions they do not understand.

5. A pass mark of 90% (47/52) must be achieved for a satisfactory result. The assessor must provide feedback to the candidate to clarify any answers deemed to be incorrect.

6. Reasonable adjustment to the assessment is to be made by the assessor where deemed necessary.

Knowledge Assessment

Question 1-A	**(PC1.1)**
Give three (3) examples of compliance documentation you should read before using a grader. Compliance documentation tells you the rules and regulations you need to follow.	
Answer may include: • Codes of practice • Occupational Health and Safety Acts (OHS) • Regulations • Operator's manual • Site procedures	

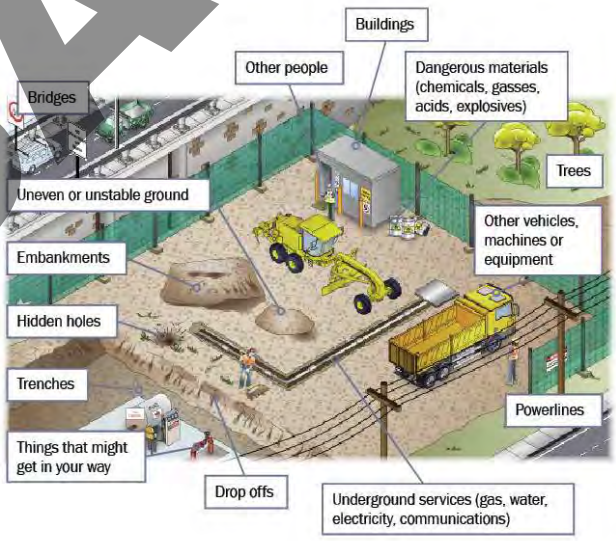
Question 1-B	**(PC1.2)**
What are work instructions and what do they explain?	
Answer may include: Work instructions tell you about the job. They include: what the job is, where you will do the job, how to do the job, how long the job will take, equipment and tools you need and what you should do if an unexpected situation arises.	

Question 1-C	**(PC1.3)**

List three (3) common hazards you might need to plan for before starting work?

Answer may include:

- uneven or unstable ground, other people in the work area, other vehicles, machines or equipment in the work area, powerlines, trees, overhead lines, bridges, buildings, things that might get in your way, dangerous materials (chemicals, gasses, acids, explosives), underground services (gas, water, electricity, communications), trenches



Question 1-D	**(PC1.3)**

What does the environmental management plan explain? Give at least four (4) examples.

Answer may include:

The environmental management plan tells you how to:

- manage waste and recycling
- lower air pollution
- lower erosion and damage to soil
- stop damage to underground services
- control fire
- work more safely in confined spaces
- lower damage to nature (trees, plants, etc)

Question 1-E	**(PC1.4)**

List three (3) examples of personal protective equipment (PPE) you may need to wear while operating your machine.

Answer may include:

- helmet
- safety boots
- gloves
- safety glasses
- dust mask
- hearing protection

Question 1-F	**(PC1.4)**

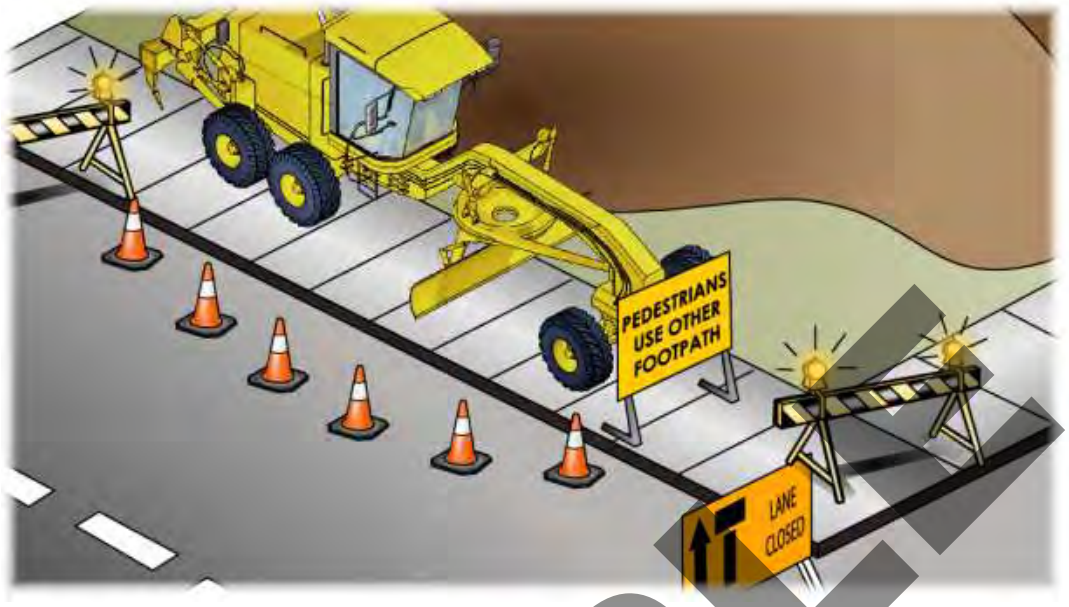
What footwear must you wear when doing earthmoving work?

Answer may include:

Non-slip shoes that cover your whole foot. Some sites require steel-capped boots.

Question 2-C	**(PC2.8)**

How do you park and shut down a grader? Explain the steps.



[Assessors note: Answer may vary with the machine being used.]

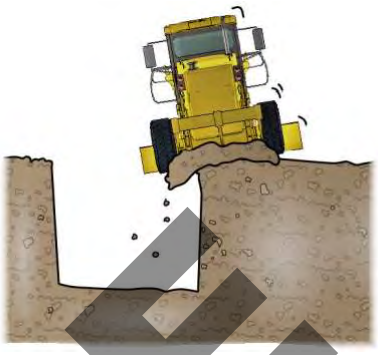
1. Park safely away from hazards and entrances.
2. Activate the park brake.
3. Put the transmission in neutral or park.
4. Idle engine to stabilize temperature before turning off.
5. Switch off the engine.
6. Remove the key.
7. Refuel if necessary.

Question 2-G	**(PC2.3, 2.6, 5.2)**

While operating your machine, what hazards should you keep checking for? Give at least four (4) examples.

Answer may include:

- people
- vehicles, equipment and other machines
- buildings and other structures
- low bridges, obstructions
- trenches and excavations, trees
- overhead powerlines
- hazardous materials such as chemicals, gasses, explosives and acids
- underground services such as gas, water or electricity lines
- ground conditions such as soft or uneven ground.



Question 2-H	**(PC2.6)**

You are driving the grader close to a trench. The trench is more than 1.5 metres deep and a workmate is in the trench. What do you do first?

Answer may include:

- Set up shoring, benching or battering depending on the type of trench.
- Do not operate or grade material too near to the trench.

Question 2-I	**(PC2.6)**

How can you stop a trench from caving in? Give at least two (2) examples.

Answer may include:

- benching
- battering
- shoring or trench shields
- offset the blade to the maximum to move the machine mass (weight) away from the trench

Question 2-M	**(PC2.5)**

How would you work your grader when the light is bad or at night? List two (2) ways.

Answer may include:

- turn on the work lights
- travel slower and allow extra stopping distances.

Question 2-N	**(PC2.5)**

How do you drive safely up or down a steep hill?

Answer may include:

Go straight up or down, not at an angle.

Question 2-O	**(PC2.5, 2.6)**

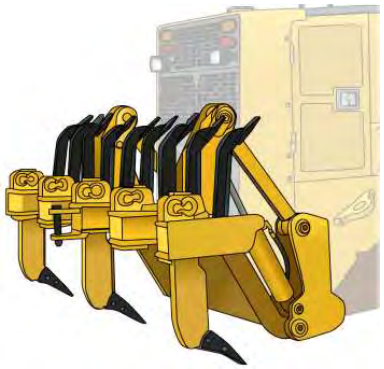
What must you do when approaching underground services while operating the rippers?

Answer may include:

- Raise the rippers clear of the ground until you have safely passed the underground services

Why?

- To prevent the rippers from damaging or collapsing the service cavities.



Question 2-P	**(PC2.3)**

The work plan calls for an area with a lot of rock to be ripped. Would you use a grader with a ripper attachment for this work?

Answer may include:

No the ripper attachment is designed to loosen up packed soil, not rock.

Question 2-Q	**(PC2.3, 2.4)**

The work plan calls for an area to be ripped prior to grading to allow water to quickly get below the surface. What would limit how deep you could rip with the grader?

Answer may include:

The grader traction. Ripper depth would need to be adjusted to maintain traction and limit wheel spin

Question 2-R	**(PC2.7)**

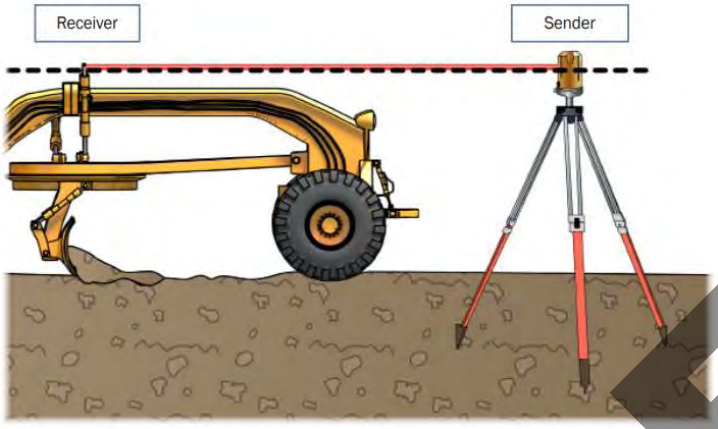
What you do when an alarm or buzzer sounds or a warning light comes on?

Answer may include:

- stop the machine
- try to locate the fault
- report to supervisor.

Question 2-S	**(PC2.4, 2.5)**

What is a laser grade control system?



Answer may include:
A laser grade control system can be used to guide the cutting depth and angle of the blade without the operator having to take any action.

Question 2-T	**(PC2.4, 2.5, 2.8)**

What is a GPS used for on an excavator?

Answer may include:

The GPS can be used to control the steering system of the grader so it travels along a pre-set path.

Question 3-A	**(PC3.1)**

List at least two (2) attachments you can use on a grader.

Answer must include answers in bold text:

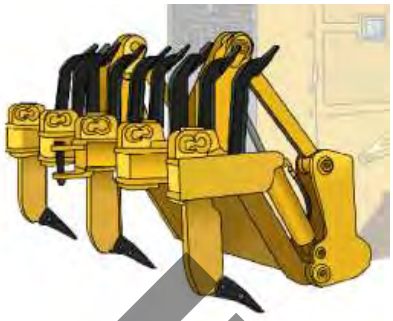
- rippers
- scarifier
- dozer blade
- guidance system
- laser controlled leveling system
- rear mounted roller
- rear mounted broom

Question 3-B **(PC3.1, 3.4)**

Which grader or attachment is best for breaking up asphalt ready for pushing off work area?

Answer may include:

Rear mounted rippers



Question 3-C **(PC3.2)**

How would you find out the correct way to remove or fit an attachment?

Answer may include:

Read the attachment's and machine operators manuals

Question 3-D **(PC 3.2, 3.3)**

How do you check the attachment is fitted correctly?

Answer may include:

Check all bolts, pins and fasteners are fitted correctly and tight, check all hoses are correctly clamped or tied off to prevent damage.

Practical Assessment – Check List

The skills and knowledge required to operate a grader to load, distribute and place materials, work must be performed on at least two occasions and carrying out the actual practical task may be filmed and noted of where the video file is stored.

Note See appendix for guidelines on what to look out for when candidate is performing practical tasks. Use the Appendix topic steps as basic benchmark guides.

Practical Assessment 1 – Pre-Start

Note: the job task / work order will be given to you by your trainer or assessor or you can do the sample job / work order contained within this document.

Task to be performed for job task / work order;

- ❑ Acquire all compliance documentation as needed according to job task / work order. (PC 1.1)
- ❑ Do a site inspection before performing job task / work order (PC 1.3, 1.2)
  - ❑ **Identify and report all potential hazards, risks and environmental issues** during site inspection and prepare a (Jsea), Emp document - Environmental management plan (EMP) (PC 1.3)
- ❑ Select appropriate PPE Equipment to operate Grader and make a note in job plan. (PC 1.4)
- ❑ Refuel vehicle and wear appropriate PPE equipment. (See appendix for Hazard control check list for the worksite/area when refuelling vehicle.) – (PC 1.4)

- ❑ Check that the Vehicle is safe to use and do a **pre start check** on Grader vehicle and attachments. (pc 2.1, 2.2)
- ❑ Review Emergency procedures for site, operating grader and discuss with supervisor (1.7)
- ❑ Crate a job plan outlining, what needs to be performed e.g. equipment needed, site report, traffic management required e.g. barriers, environment assessment, get PPE Equipment ready, confirm with management in writing or oral recording of conversation with supervisor about work instructions (PC 1.2, 1.8, 1.6, 1.4, 1.5) Also source the vehicles operators manual.
  - ❑ Note you must discuss your work area with your supervisor and other workers and identify the hazards and decide on the most effective control which should be used.

Submit the following documents;

- ❑ Job Plan – with notes of work that needs to be done and other support documents (ie traffic management plan along with all relevant documentation), also source a copy of the vehicles operators manual.
- ❑ Emp document - Environmental management plan (EMP)
- ❑ Jsea document - Job safety and environment analysis (JSEA) or Safe work method statement (SWMS)
- ❑ Video recording may be used for site inspection and conversation with supervisor of the work that needs to be carried out.
- ❑ 2 x Copies of Work Order 1 for each job performed / task.

Practical Assessment 1 – Pre-Start – Check list

Observation performed when performing Practical Task 1 from work order provided (Job 1, Job 2) Candidate:	**Yes**	**No**	**N/A**	**Job 1**	**Job 2**
Located and apply relevant documentation, policies and procedures. (PC 1.1, PC 1.2, 1.7)	❑	❑	❑		
❑ Locates operator's manual for Grader and finds requirements for pre-start and start-up checks. (PC 1.1)				❑	❑
❑ Locates site policies and procedures for personal protective equipment requirements when operating Grader.				❑	❑
❑ Candidate displays preparedness for emergency situations by outlining the steps to be taken in the case of a fire or accident.				❑	❑
❑ Interrupt work order or requirements before performing work task. (PC 1.2)				❑	❑
Review Emergency procedures and discuss with supervisor (pc 1.7)	❑	❑	❑	❑	❑
Selected and wear personal protective equipment. (PC 1.4)	❑	❑	❑		
❑ PPE selected must be as per site policies and relevant to the task. As a minimum MUST include appropriate footwear, Hi-visibility workwear and hard hat.				❑	❑
❑ PPE must be checked for serviceability and correctly fitted.				❑	❑
Conducted pre-start inspection of Grader.	❑	❑	❑		
❑ Pre-start check is carried out as per operators manual and workplace policies and procedures. Where possible a completed pre-start checklist should be provided as supporting evidence. (PC 2.1)				❑	❑
❑ During inspection the candidate must identify and/or verbalise any common faults they are looking for. (PC 2.1)				❑	❑
❑ Faults and/or damage found during inspection must be managed as per workplace policies and procedures. This should include, tagging out faulty equipment, isolating faulty equipment, reporting to the appropriate person and recording in a logbook. If no faults or damage are found the candidate must verbalise the procedure for the worksite to the assessor. (pc 2.2)				❑	❑
Carried out vehicle refuelling requirements and procedures where applicable. (PC 1.3, 1.4, 1.5)	❑	❑	❑		
❑ Candidate must refuel the Grader when necessary. The candidate must refer to workplace policies and procedures for refuelling. (PC 1.5)				❑	❑
❑ The correct PPE for refuelling must be selected and worn during the refuelling process. (PC 1.4, 1.5)				❑	❑
Crate a job plan outlining, what needs to be performed e.g. equipment needed, site report, traffic management required, environment assessment, Review traffic management plan, review work order and source appropriate tools or attachments for the job, confirm with management in writing or oral recording of conversation with supervisor about work instructions (PC 1.2, 1.8, 1.6, 1.4, 1.5)	❑	❑	❑	❑	❑

Submit the following documents;

- ❑ Job Plan – with notes of work that needs to be done and other support documents (ie traffic management plan along with all relevant documentation)
- ❑ Emp document - Environmental management plan (EMP)

- ❑ Jsea document - Job safety and environment analysis (JSEA) or Safe work method statement (SWMS)
- ❑ Video recording may be used for site inspection and conversation with supervisor of the work that needs to be carried out.
- ❑ 2 x Copies of Work Order 1 for each job performed / task.

The applicants' performance in Practical Assessment 1 – Pre-Start activity was deemed to be:	
☐ Satisfactory	**☐ Not yet satisfactory**
Applicant signature:	**Date:**
Trainer/assessor signature:	**Date:**

Practical Assessment 2 – Drive and operate a Grader

Task to be performed….

- ❑ Identify and report all potential hazards, risks and environmental issues. (PC 1.3)
- ❑ Start the Grader (2.3)
- ❑ Drive and operate the equipment to complete the work order tasks, along with Monitor hazards and risks during operations, and ensure safety of self, other personnel, plant and equipment (2.3, 2.4, 2.5, 2.6)
- ❑ Monitor and manage equipment performance using indicators and alarms (PC 2.7)
- ❑ and follow job task / work order, (PC 2.3, 2.4, 2.5)
- ❑ Finally, park and secure the Grader (PC 2.8)

Files to submit:

- ❑ 2 x Copies of work order.
- ❑ Job safety and environment analysis, (JSEA)
- ❑ Environmental management plan (EMP)
- ❑ Safe work method statement (SWMS)
- ❑ 1 x Video file of candidate operating vehicle & its machinery may be used. For job / work order 1

Video File Name: _____

- ❑ 1 x Video file of candidate operating vehicle & its machinery may be used. For job / work order 2

Video File Name: _____

Practical Assessment 2 – Drive and operate Grader – Check List

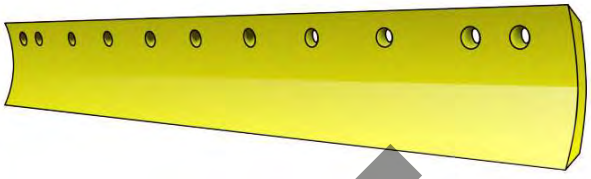
Observation performed when performing Practical Task 2 from work order provided (Job 1, Job 2) Candidate:	**Yes**	**No**	**N/A**	**Job 1**	**Job 2**
Identifying and reporting all potential hazards, risks and environmental issues	❑	❑	❑		
❑ The applicant must inspect the work area and identify any potential hazards and risks that exist including environmental hazards and risks. Where possible a completed **site inspection checklist** should be provided as supporting evidence. (pc 1.3)				❑	❑
❑ **Hazard control** methods consistent with the Hierarchy of hazard control and any existing environmental management plan must be used to manage the hazards. Site policies and procedures must also be followed. (pc 1.3) ❑ Submit jsea, EMP Environmental management plan (EMP) ❑ Submit a Safe work method statement (SWMS)				❑	❑
❑ The applicant must **inspect** the **work area** and **identify any potential hazards** and risks that exist including environmental hazards and risks. Where possible a completed site inspection checklist should be provided as supporting evidence. (pc 1.3)				❑	❑
Starting the Grader	❑	❑	❑		
❑ Candidate must ensure any footsteps and handgrips are clear of mud, debris and slippery substances. The candidate must face the Grader when mounting and dismounting and maintain three (3) points of contact at all times. Must not jump.				❑	❑
❑ Grader is started as per manufacturer's instructions and workplace policies and procedures. Post-start checks and tests must be carried out and any abnormalities rectified (where possible), reported and recorded.				❑	❑
Driving and operating the equipment	❑	❑	❑		
❑ Candidate applies safe work practices when driving and operating the Grader, including but not limited to using all warning devices and motion alarms, always checking travel direction is clear, continually monitoring ground and site conditions, monitoring the movement of the ❑ Front-mounted scarifier (mixer) ❑ Rear-mounted ripper ❑ Curved cutting edge blade ❑ Serrated edge blade ❑ Flat edge blade ❑ Roller and travelling at a safe speed.				❑	❑
Monitored and managed equipment performance using indicators and alarms	❑	❑	❑		
❑ Candidate identifies and monitors all indicators and alarms relevant to managing the performance of the Grader.				❑	❑
❑ The candidate must react appropriately to any indicators or alarms and apply problem solving and troubleshooting techniques to rectify any problems when operating the Grader.				❑	❑
❑ The candidate adjusts operating techniques to suit site conditions and/or as a direct response to any indicators or alarms.				❑	❑
Parked and secured Grader	❑	❑	❑		
❑ Candidate parks Grader in an appropriate and safe location.				❑	❑
❑ Grader is shutdown as per operators manual and workplace policies and procedures. Key must be removed.				❑	❑

Practical Assessment 4 – Complete operations to specification

- Attachments

You are to select, fit, test, use and remove at least two attachments when performing a number of operations according to job / work order.

Cutting Edge Blade

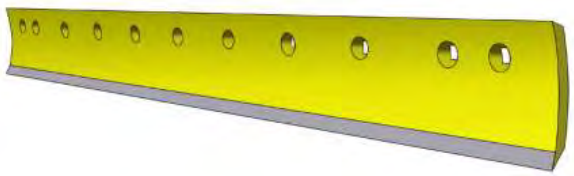


Roller

Front-mounted scarifier

Rear mounted ripper

Flat Edge Blade



Serrated edge blade

Practical Assessment 4 – Complete operations to specification – Attachments – Check List

Note: if necessary, the candidate must **select, fit, test, use and remove at least two attachments** selected from but not limited to those listed below highlighted in bold. The attachment must be certified and approved in line with workplace procedures.

Observation performed when performing Practical Task 4 from work order provided (Job 1, Job 2) Candidate used / and:	**Yes**	**No**	**N/A**	**Job 1**	**Job 2**
Front-mounted scarifier (mixer)	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑
Rear-mounted ripper	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑
Curved cutting edge blade	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑

Observation performed when performing Practical Task 4 from work order provided (Job 1, Job 2) Candidate used / and:	**Yes**	**No**	**N/A**	**Job 1**	**Job 2**
Serrated edge blade	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑
Flat edge blade	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑
Roller	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑

Observation performed when performing Practical Task 4 from work order provided (Job 1, Job 2) **Candidate used / and:**	**Yes**	**No**	**N/A**	**Job 1**	**Job 2**
Other: _____	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑
Other: _____	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
❑ Attachment is fitted as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is tested to ensure correct and secure fitting and correct operation.				❑	❑
❑ Candidate uses attachment in accordance with workplace procedures and as it is designed to be used.				❑	❑
❑ Attachment is removed as per manufacturer's instructions and workplace policies and procedures.				❑	❑
❑ Attachment is cleaned and stored as per workplace policies and procedures.				❑	❑

The applicants' performance in Practical Assessment 4 – Complete operations to specification activity was deemed to be:

☐ **Satisfactory** ☐ **Not yet satisfactory**

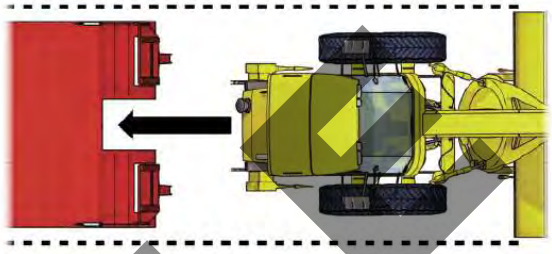
Applicant signature: **Date:**

Practical Assessment 5 – Load, unload and relocate Grader.

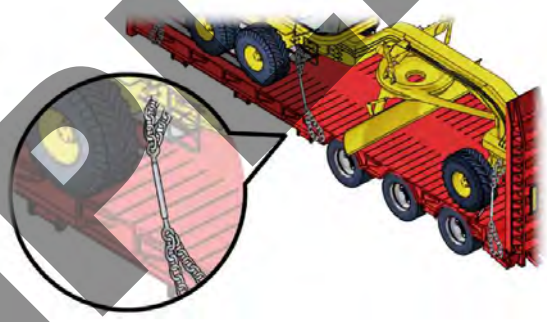
You are to demonstrate the ability to;

Prepare grader for relocation

Move grader safely within and between work areas, observing relevant codes and traffic management requirements



Assist with loading and unloading machine from float/trailer as required by workplace procedures.



Practical Assessment 5 – Load, unload and relocate Grader checklist

Candidate must demonstrate the ability to;

Prepare grader for relocation,

Move grader safely within and between work areas, observing relevant codes and traffic management requirements,

Assist with loading and unloading machine from float/trailer as required by workplace procedures.

Observation performed when performing Practical Task 5 from work order provided (Job 1, Job 2) **Candidate:**	**Yes**	**No**	**N/A**	**Job 1**	**Job 2**
Prepared Grader for loading, unloading or relocation	❑	❑	❑		
❑ Attachment selected is correct for the job to be performed.				❑	❑
❑ Required tools and equipment for fitting/removing the attachment are selected and used.				❑	❑
Moved Grader safely within and/or between work areas, observing relevant codes and traffic management requirements	❑	❑	❑		
❑ Appropriate traffic management including adequate and correct signage and the assistance of a traffic control person is in place when and where necessary.				❑	❑
❑ If travelling on a public road the candidate confirms the Grader meets local requirements for registration and roadworthiness.				❑	❑
❑ Candidate is appropriately qualified (ie: licenced) to operate Grader on public road				❑	❑
❑ Candidate follows all road laws and requirements when travelling on a public road and/or all site requirements and safe work procedures when moving between work areas on the job site.				❑	❑
Assisted loading and unloading machine from float/trailer in accordance with safe work practices	❑	❑	❑		
❑ Candidate assists qualified person to load and unload the Grader from a float or trailer.				❑	❑
❑ Loading and unloading of the float or trailer is performed in line with safe work practices and the chain of responsibility.				❑	❑

The applicants' performance in Practical Assessment 5 – Load, unload and relocate Grader activity was deemed to be:

☐ **Satisfactory**	☐ **Not yet satisfactory**
Applicant signature:	**Date:**
Trainer/assessor signature:	**Date:**

Practical Assessment 6 – Housekeeping

You are to demonstrate the ability to;

Clear a work area and dispose of or recycle any material according to workplace procedures

Manage and/or report hazards to maintain a safe working environment

Complete and file or distribute documentation in a manner that complies with workplace practices

Practical Assessment 6 – Housekeeping checklist

Candidate must demonstrate the ability to;

Clear a work area and dispose of or recycle any material according to workplace procedures

Manage and/or report hazards to maintain a safe working environment

Complete and file or distribute documentation in a manner that complies with workplace practices.

Observation performed when performing Practical Task 6 from work order provided (Job 1, Job 2) **Candidate:**	**Yes**	**No**	**N/A**	**Job 1**	**Job 2**
Cleared work area and disposed of or recycle materials according to workplace procedures	❑	❑	❑		
❑ Candidate must ensure the work area is clear of any rubbish and debris. This should occur before during and after operation.				❑	❑
❑ Materials must be disposed of as per policies and procedures and/or environmental management requirements. This should include recycling of materials where possible and the correct disposal of environmentally sensitive materials and substances.				❑	❑
Managed and/or reported hazards to maintain a safe working environment	❑	❑	❑		
❑ Housekeeping hazards must be managed in line with workplace policies and procedures and the hierarchy of hazard control.					
❑ Housekeeping hazards must be reported and documented in line with workplace policies and procedures.					
Complete and file or distribute documentation in a manner that complies with workplace practices	❑	❑	❑		
❑ All required documentation is completed and filed or distributed to the appropriate people in line with workplace policies and procedures. This Answer may include but is not limited to:				❑	❑
❑ Checklists				❑	❑
❑ Reports				❑	❑
❑ Site specific forms				❑	❑
❑ SWMS/JSEA.				❑	❑

The applicants' performance in Practical Assessment 6 – Housekeeping activity was deemed to be:

☐ Satisfactory	**☐ Not yet satisfactory**
Applicant signature:	**Date:**
Trainer/assessor signature:	**Date:**

Knowledge and Practical Assessment Summary – Competency Sign Off

Files to be submitted.

Knowledge Assessment
❑ 1 x Knowledge assessment

Practical Work
❑ 2 x activities performed in work place or simulated environment (Additional evidence: Video footage of candidate performing work order)
Name of work order and/or Video File 1: _____
Name of work order and/or Video File 2: _____

Documents that need to be submitted.
❑ 2 x Copies of work order
❑ 2 x Job safety and environment analysis, (JSEA) – 1 each for work order
❑ 2 x Environmental management plan (EMP) – 1 each for work order
❑ 2 x Safe work method statement (SWMS) – 1 each for work order
❑ 2 x Job plans with notes and attachments of required documentation – 1 each for work order
❑ 1 x Trainer's Assessment Work book filled in of candidate's assessment. Assessment Checklists

Knowledge and Practical Assessment Summary	**Satisfactory**	**Not Satisfactory**
0. Knowledge Assessment - Written Quiz	❑	❑
1. Pre-Start	❑	❑
2. Drive and operate Grader	❑	❑
3. Complete operations to specification	❑	❑
4. Attachments	❑	❑
5. Load, unload and relocate Grader	❑	❑
6. Housekeeping	❑	❑

Competency:	Not Yet Competent ❑ Date_____	Competent ❑ Date_____

Feedback to be given to candidate or to Workplace Supervisor

Trainer / Assessor signature: **Date:**	The learner has been assessed as ❑ **Not Yet competent /** ❑ **competent** in the elements and performance criteria, critical aspects for assessment, required skills and knowledge for this unit and the evidence presented is: ❑ **Authentic** ❑**Valid** ❑ **Reliable** ❑ **Current** ❑ **Sufficient**

Appendix.

Unit Performance evidence.

The candidate must demonstrate the ability to complete the tasks outlined in the elements and performance criteria of this unit.

The candidate must demonstrate completion of grader operations that safely, effectively and efficiently follows workplace procedures to meet carry out work activity on at least two occasions, and include:

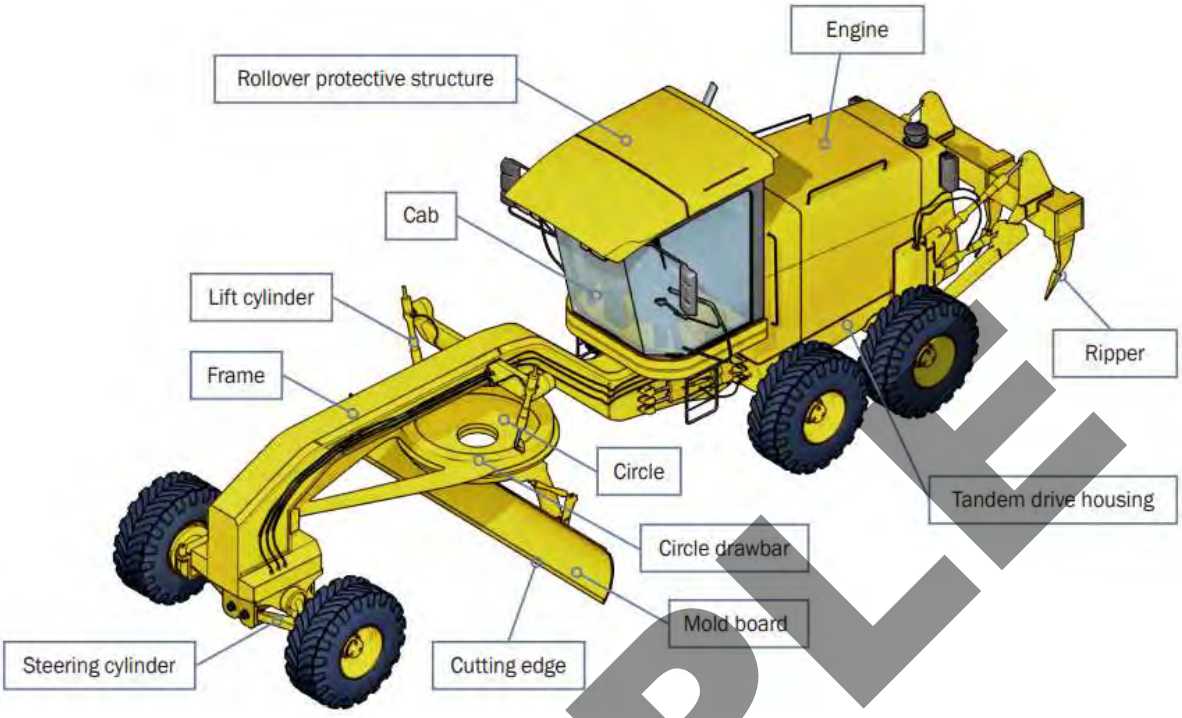
- conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
- driving and operating the equipment to site conditions
- completion of operations to specification using at least two different material types including:
  - cutting and maintaining drains
  - forming/upgrading/maintaining roads
  - mixing/ spreading materials
  - scarifying and ripping
  - cutting and trimming of batters
  - trimming of road sub-grades and pavements
  - site clean-up
  - form and carry a windrow
- selecting, fitting, testing, using and removing at least two attachments, the attachment must be certified and approved in line with workplace procedures
- assisting with loading and unloading unit plant type from float/trailer
- parking and securing of equipment.

In the course of the above the candidate must also:

- locate and apply relevant documentation, policies and procedures
- select and wear personal protective equipment required for work activities
- carry out vehicle refuelling requirements and procedures where applicable
- apply safe work practices, identifying and reporting all potential hazards, risks and environmental issues
- apply problem solving and troubleshooting techniques when operating equipment
- monitor and manage equipment performance using indicators and alarms
- identify common equipment faults
- establish weight of load
- apply levelling techniques
- apply cut and fill techniques
- conduct towing of equipment/plant where required
- select and use the required tools and equipment
- apply methods of changing machine attachments
- use a range of communication techniques and equipment essential to the safe completion of work activity, including hand, audible and other signals
- meet written and verbal reporting requirements and procedures associated with equipment operations
- organise work activities to meet all task requirements.

Basic Pre-Inspection Check list.

Identify Components for Grader.



Check that each item of Grader is operational. (Use Pre-Inspection Check list.)

EARTHMOVING EQUIPMENT - Daily Inspection Checklist Week Starting ___/___/___

Company/Site _____ Machine Type _____

Machine Hour Meter _____ / / Machine Number _____

CHECK DAILY BEFORE EACH SHIFT: [✓] = OK [×] = Action needed [N/A] = Not applicable	Mon	Tue	Wed	Thur	Frid	Sat	Sun
WEAR OR DAMAGE: structure, guards, chains, hooks, pins...							
HYDRAULICS: rams, hoses, leaks, wear...							
WHEELS, TRACKS, TYRES: nuts, pressure, wear, tension...							
ATTACHMENTS: bucket, cutting edge, pins, teeth, pivots...							
FLUIDS: oil, hydraulic, coolant, fuel, battery, wiper water...							
CABIN: seat, seat belts, ROPS/FOPS, loose objects, visibility, fire extinguisher, windows, washer, wipers, mirrors, demister...							
LOAD CAPACITY PLATE: present, legible, clean, correct...							
BRAKES: park brake, service brake...							
CONTROLS: steering, indicators, lights, gauges, operation...							
WARNING DEVICES: horn, reversing beeper, alarms, lights...							
OTHER: warning signs, operator manual, decals, locks, radio...							
Operator doing check to clearly write/sign their name at the bottom of each column.							

FAULT REPORTED BY _____ Date: ___/___/___

DANGER DO NOT OPERATE

Description of fault _____

NOTE: Operator to TAG OUT machine if needed.

ACTION TAKEN TO RETURN TO SERVICE

Print Name _____

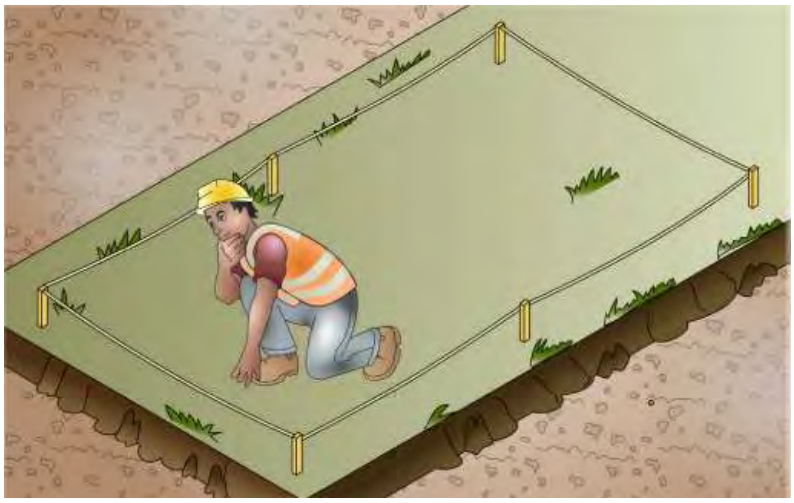
Date ___/___/___ Signature _____

Hazard control check list for the worksite/area when refuelling vehicle.

Hazard	Effects show		Personal Protection Needed
	immediate	delayed	
Example: Welding burns	√		Example: Gloves, long sleeves, long trousers,

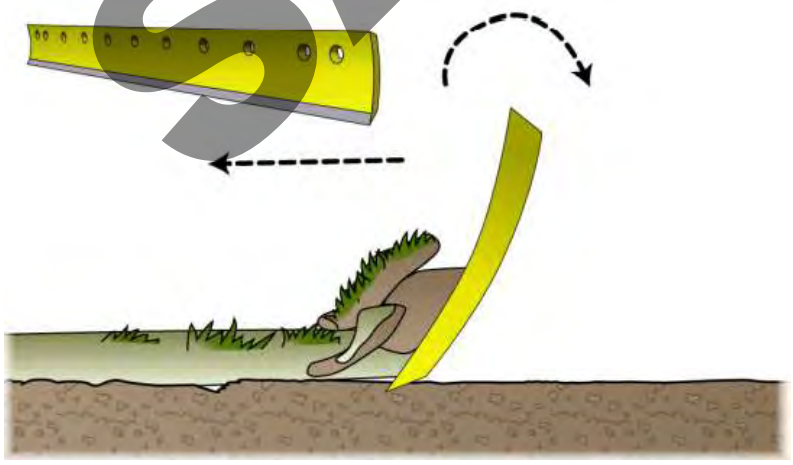
How do you strip top soil.

1. Mark the area using pegs.

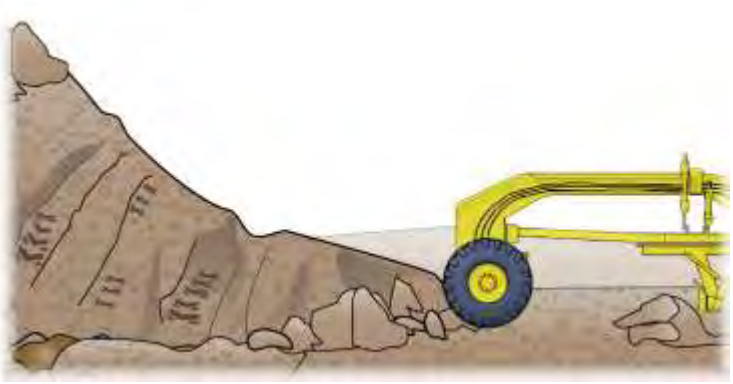


2. Drive forward with the blade at an angle and on the ground. This will fill in the dips and flatten out the bumps. Reverse in the same line with the blade up.

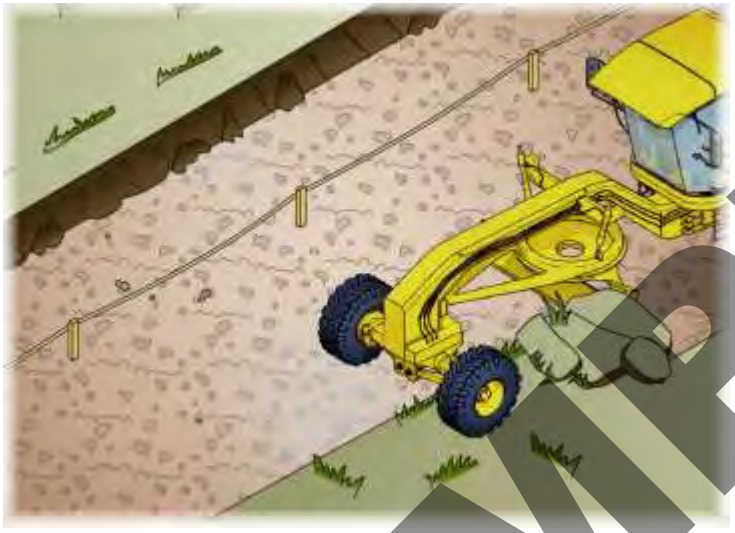
3. Tilt the blade backwards and lower the arms. Keep moving forwards to continue stripping the topsoil.



4. Keep pushing with full blade to end of strip run.



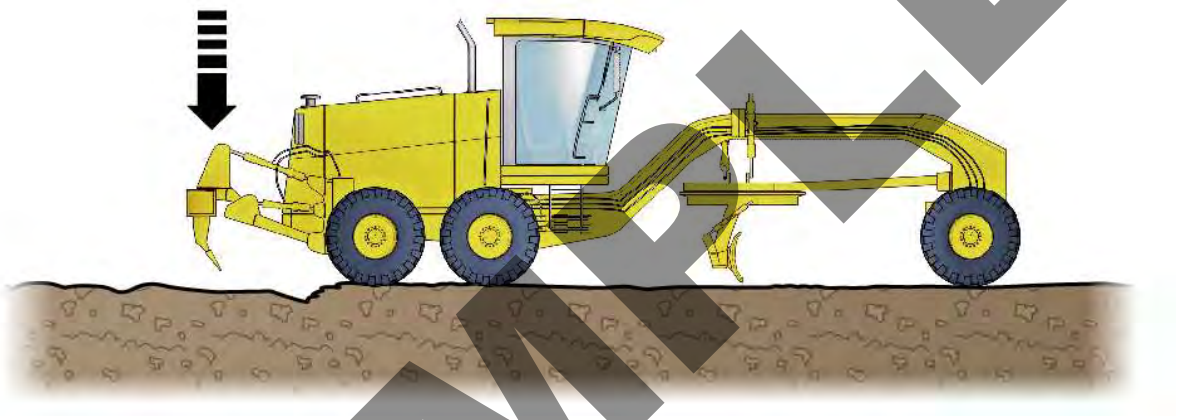
5. Move ½ blade width and make the next cut.



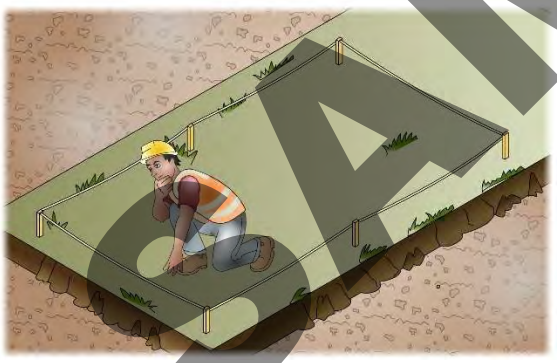
How to you use a ripper to break up dirt / top soil for grading.

1. Once Ripper is mounted and all attached hydraulic lines have been fitted,

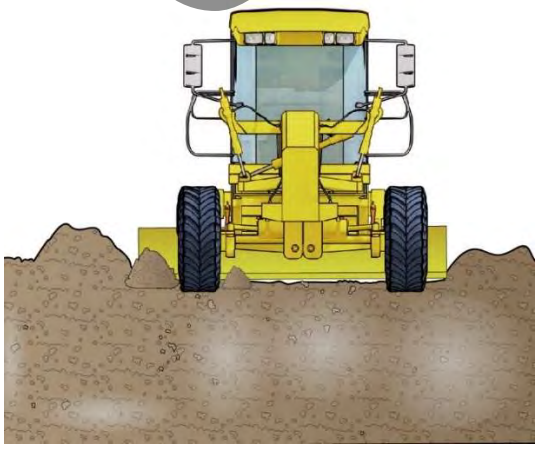
2. Test the device before using it i.e., move device up and down to see if it is securely attached.



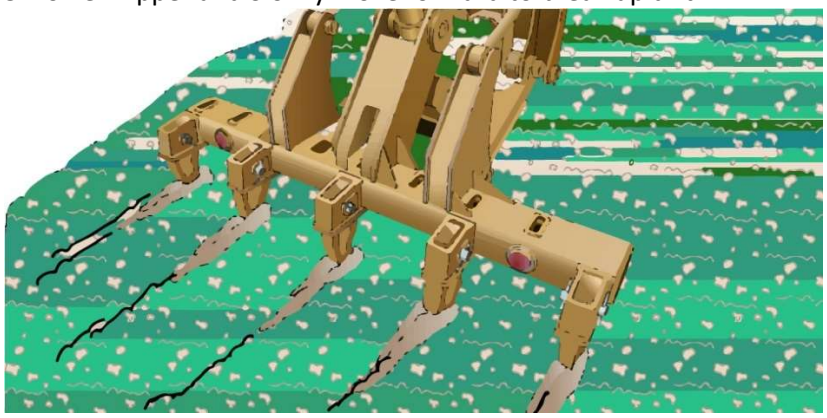
3. Plan your path.



4. Move Grader into position.

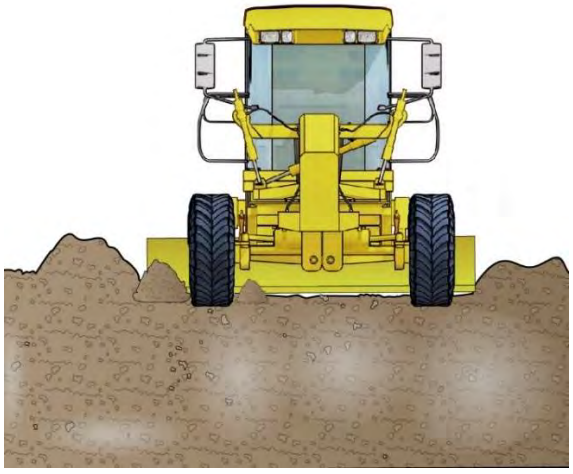


5. Lower Ripper and Slowly move forward to break up dirt.

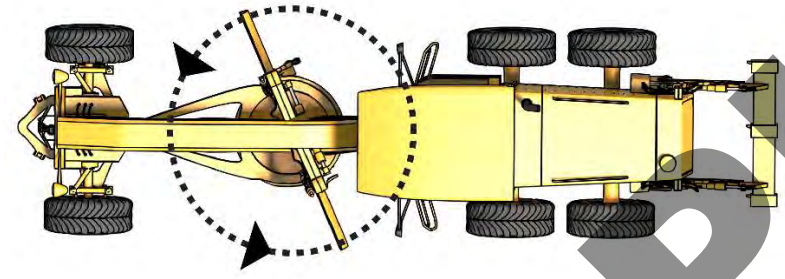


How to distribute dirt over a surface.

1. Align Grader up with start position

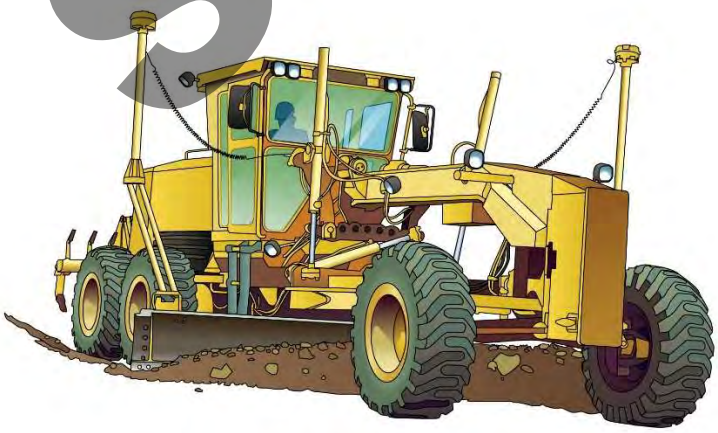


2. Rotate blade 30 to 40 degrees to distribute dirt.



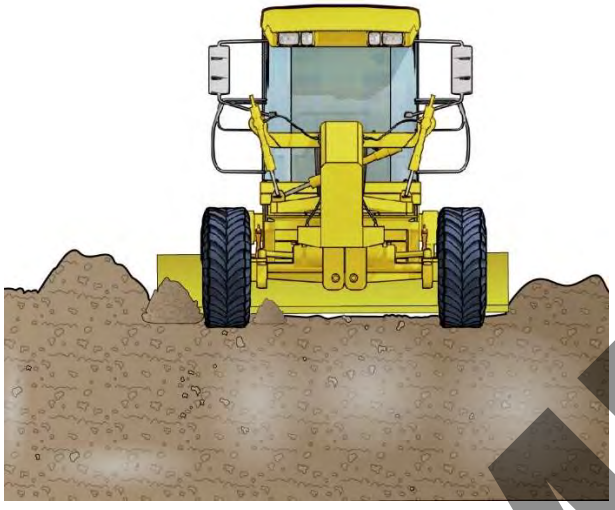
3. Angle wheels if necessary

4. Drive forward.

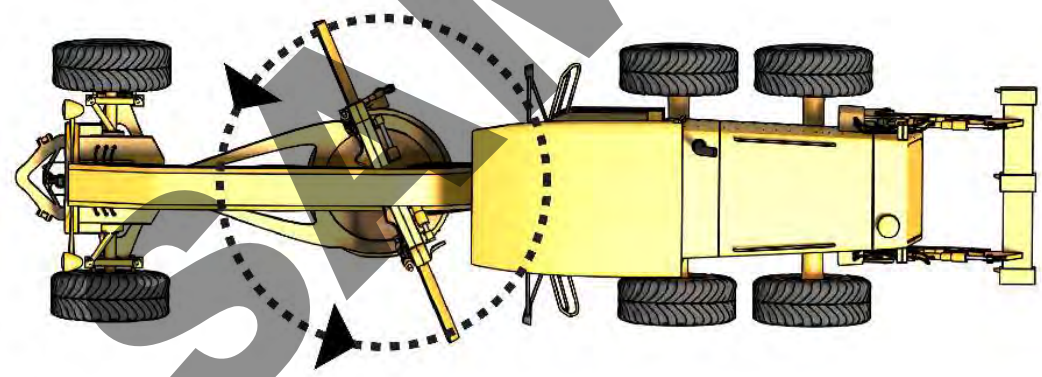


How to use Grader to Create a drainage Dich or v neck ditch.

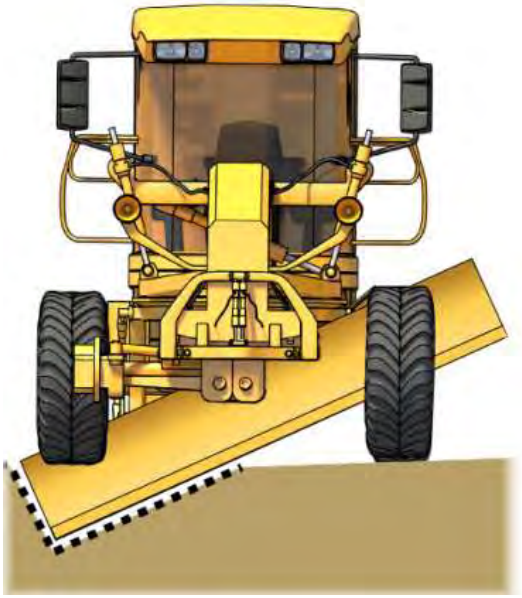
1. Align Grader up with start position



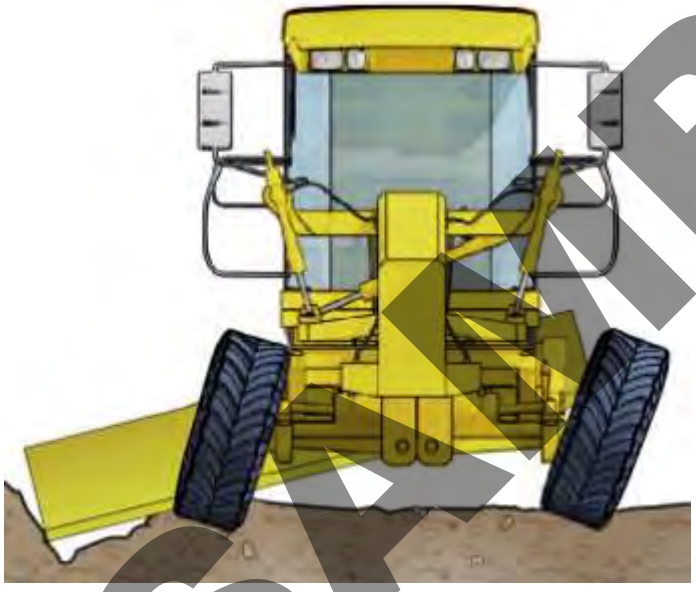
2. Rotate blade 30 to 40 degrees to distribute dirt.



3. Tilt the blade putting the leading corner closest to the ground.



4. Tilt wheels if necessary, the wheels should be tilted away from the ditch.



5. Drive Forward.

GRADER

Learner Workbook

(Formative assessment)

STUDENT COPY

RIIMPO324F –
Conduct civil construction grader operations

Learner Name: _____

Student Number: _____ **Date:** _____

This resource was developed by:

EASY GUIDES Australia Pty Ltd

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Contents

Knowledge Assessment - Introduction

The assessor must be satisfied the candidate has successfully demonstrated each element and performance criteria contained in the Unit of Competency.

Knowledge Assessment Instructions

1. This assessment should be completed in writing (pen not pencil). However, where necessary it may be undertaken verbally. If verbal assessment is undertaken the candidates' responses must be clearly recorded by the assessor. The assessor must clearly note on the assessment that it was undertaken verbally.

2. Candidates should be allowed 10 minutes reading time before commencing the assessment and a further 180 minutes to complete the assessment.

3. The assessment should be completed in a quiet area free from distraction.

4. The assessment is to be completed without the assistance of learning resources. Students may ask the assessor for assistance to clarify questions they do not understand.

5. A pass mark of 90% (47/52) must be achieved for a satisfactory result. The assessor must provide feedback to the candidate to clarify any answers deemed to be incorrect.

6. Reasonable adjustment to the assessment is to be made by the assessor where deemed necessary.

Question 1-C	**(PC1.3)**

List three (3) common hazards you might need to plan for before starting work?

Identify by circling the hazards and labelling them in the image. Or list below.

Question 1-D	**(PC1.3)**

What does the environmental management plan explain? Give at least four (4) examples.

Question 1-E	**(PC1.4)**

List three (3) examples of personal protective equipment (PPE) you may need to wear while operating your machine.

Question 1-F	**(PC1.4)**

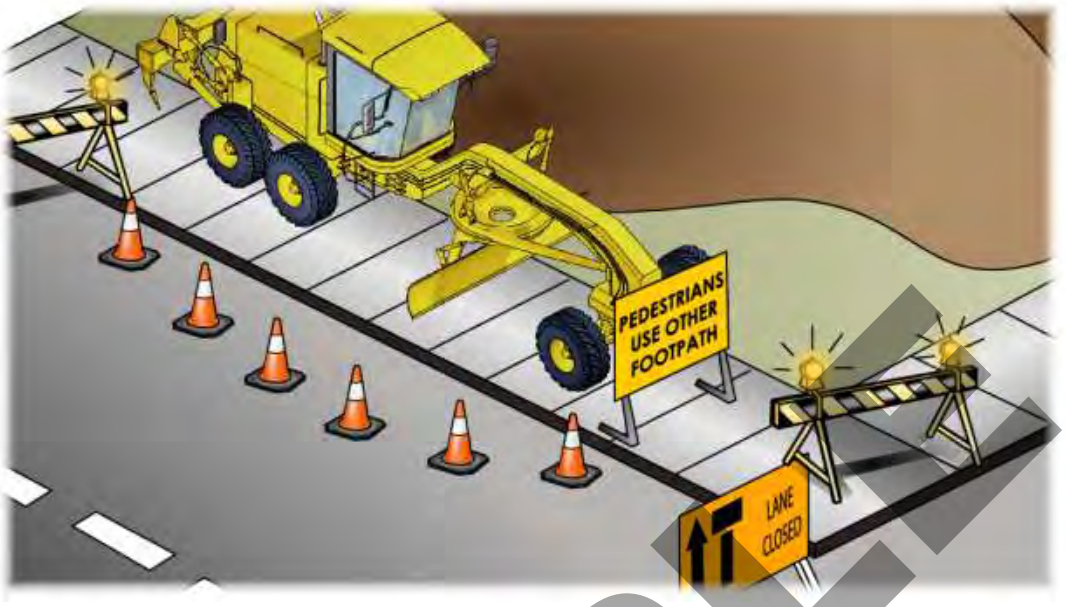
What footwear must you wear when doing earthmoving work?

Question 1-G	**(PC1.5)**

You must be a qualified traffic controller to control traffic. How do you control traffic on a worksite or public road? Give three (3) examples.

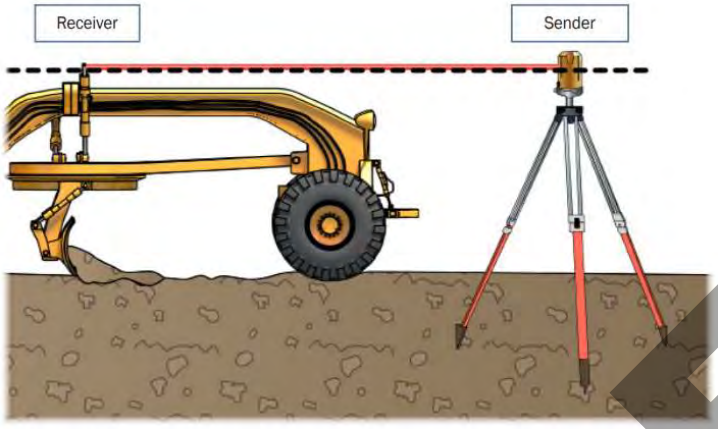
Question 2-C	**(PC2.8)**

How do you park and shut down a grader? Explain the steps.



Question 2-S	(PC2.4, 2.5)

What is a laser grade control system?



Question 2-T	(PC2.4, 2.5, 2.8)

What is a GPS used for on an excavator?

Question 3-A	**(PC3.1)**

List at least two (2) attachments you can use on a grader.

_____
_____
_____
_____
_____
_____
_____
_____

Question 3-B	**(PC3.1, 3.4)**

Which grader or attachment is best for breaking up asphalt ready for pushing off work area?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 3-C	**(PC3.2)**

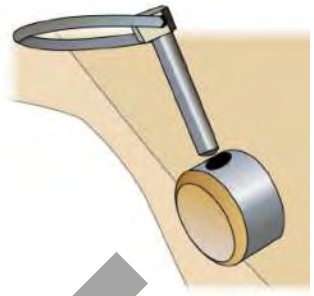
How would you find out the correct way to remove or fit an attachment?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 3-D	**(PC 3.2, 3.3)**

How do you check the attachment is fitted correctly?

_____
_____
_____
_____
_____
_____
_____
_____



Question 3-E	**(PC3.3)**

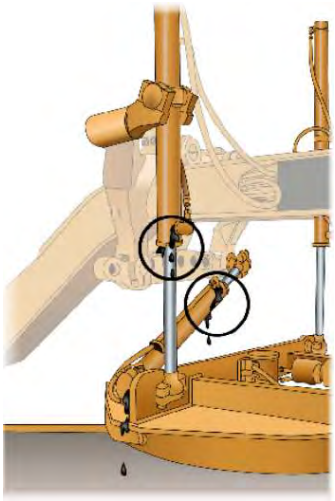
Why do you need to test the attachment before using it?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 3-F	**(PC3.3)**

What faults do you look for in the attachment hydraulic system? List two (2).

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

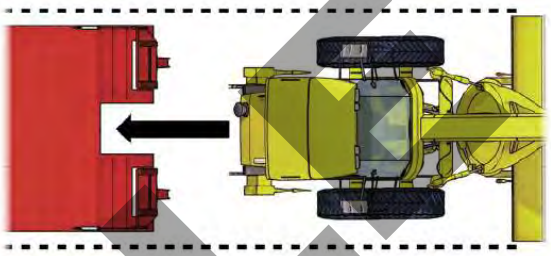


Practical Assessment 5 – Load, unload and relocate Grader.

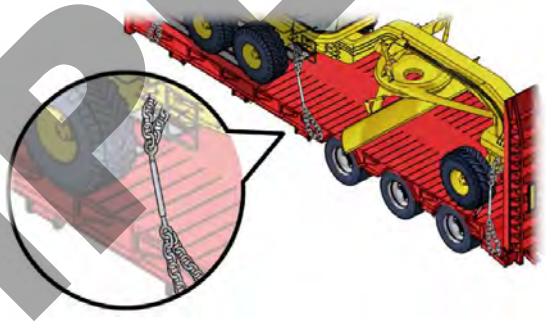
You are to demonstrate the ability to;

Prepare grader for relocation

Move grader safely within and between work areas, observing relevant codes and traffic management requirements



Assist with loading and unloading machine from float/trailer as required by workplace procedures.



Practical Assessment 6 – Housekeeping

You are to demonstrate the ability to;

Clear a work area and dispose of or recycle any material according to workplace procedures

Manage and/or report hazards to maintain a safe working environment

Complete and file or distribute documentation in a manner that complies with workplace practices

Knowledge and Practical Assessment Summary – Competency Sign Off

Files to be submitted.

Knowledge Assessment
❑ 1 x Knowledge assessment

Practical Work
❑ 2 x activities performed in work place or simulated environment (Additional evidence: Video footage of candidate performing work order)
Name of work order and/or Video File 1: _____
Name of work order and/or Video File 2: _____

Documents that need to be submitted.
❑ 2 x Copies of work order
❑ 2 x Job safety and environment analysis, (JSEA) – 1 each for work order
❑ 2 x Environmental management plan (EMP) – 1 each for work order
❑ 2 x Safe work method statement (SWMS) – 1 each for work order
❑ 2 x Job plans with notes and attachments of required documentation – 1 each for work order
❑ 1 x Trainer's Assessment Work book filled in of candidate's assessment. Assessment Checklists

Knowledge and Practical Assessment Summary	**Satisfactory**	**Not Satisfactory**
0. Knowledge Assessment	❑	❑
1. Pre-Start	❑	❑
2. Drive and operate Grader	❑	❑
3. Complete operations to specification	❑	❑
4. Attachments	❑	❑
5. Load, unload and relocate Grader	❑	❑
6. Housekeeping	❑	❑

Competency:	Not Yet Competent ❑ Date_____	Competent ❑ Date_____

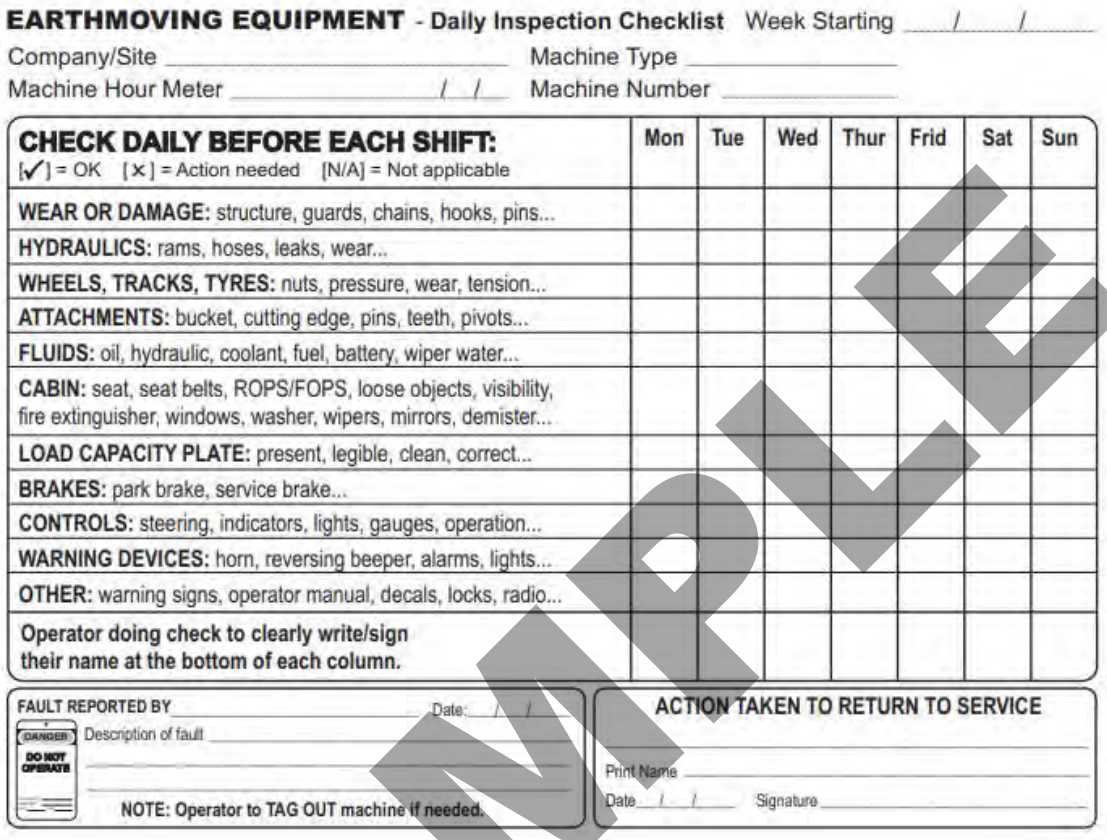
Feedback to be given to candidate or to Workplace Supervisor

Trainer / Assessor signature: **Date:**	The learner has been assessed as ❑ **Not Yet competent /** ❑ **competent** in the elements and performance criteria, critical aspects for assessment, required skills and knowledge for this unit and the evidence presented is: ❑ **Authentic** ❑**Valid** ❑ **Reliable** ❑ **Current** ❑ **Sufficient**

Appendix.

Basic Pre-Inspection Check list.

Check that each item of Grader is operational. (Use Pre-Inspection Check list.)



EARTHMOVING EQUIPMENT - Daily Inspection Checklist Week Starting ___/___/___

Company/Site _____ Machine Type _____

Machine Hour Meter _____/__/__ Machine Number _____

CHECK DAILY BEFORE EACH SHIFT: [✓] = OK [×] = Action needed [N/A] = Not applicable	Mon	Tue	Wed	Thur	Frid	Sat	Sun
WEAR OR DAMAGE: structure, guards, chains, hooks, pins...							
HYDRAULICS: rams, hoses, leaks, wear...							
WHEELS, TRACKS, TYRES: nuts, pressure, wear, tension...							
ATTACHMENTS: bucket, cutting edge, pins, teeth, pivots...							
FLUIDS: oil, hydraulic, coolant, fuel, battery, wiper water...							
CABIN: seat, seat belts, ROPS/FOPS, loose objects, visibility, fire extinguisher, windows, washer, wipers, mirrors, demister...							
LOAD CAPACITY PLATE: present, legible, clean, correct...							
BRAKES: park brake, service brake...							
CONTROLS: steering, indicators, lights, gauges, operation...							
WARNING DEVICES: horn, reversing beeper, alarms, lights...							
OTHER: warning signs, operator manual, decals, locks, radio...							
Operator doing check to clearly write/sign their name at the bottom of each column.							

FAULT REPORTED BY _____ Date: __/__/__

DANGER DO NOT OPERATE

Description of fault _____

NOTE: Operator to TAG OUT machine if needed.

ACTION TAKEN TO RETURN TO SERVICE

Print Name _____

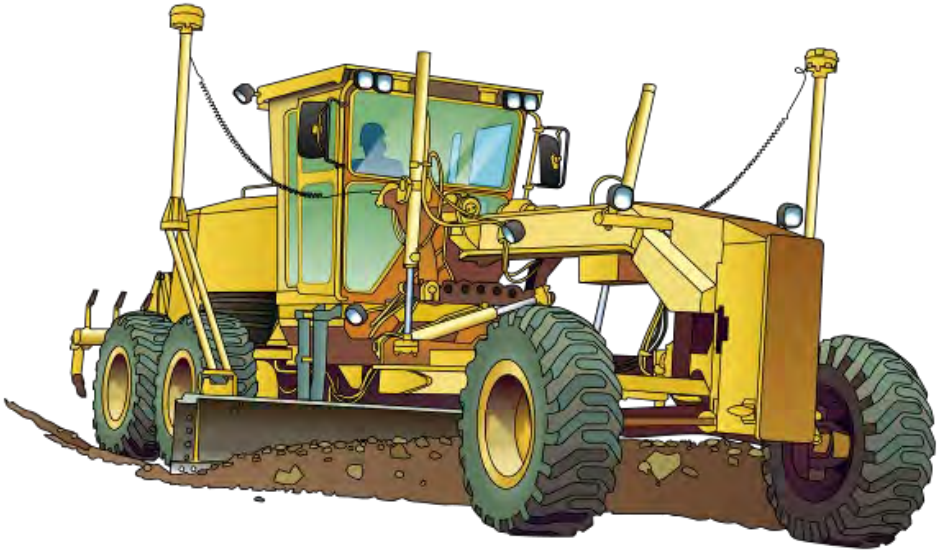
Date __/__/__ Signature _____

Hazard control check list for the worksite/area when refuelling vehicle.

Hazard	Effects show		Personal Protection Needed
	immediate	delayed	
Example: Welding burns	√		Example: Gloves, long sleeves, long trousers,

RIIMPO324F Conduct civil construction grader operations

Mapping document



The information and questions contained in the Learner Guide and PowerPoint presentation have been mapped to the elements, performance criteria, and knowledge evidence for the unit of competency RIIMPO324F Conduct civil construction grader operations.

Elements and Performance Criteria

Element 1	Performance Criteria	Learner Guide / PowerPoint	Review Questions / Formative Assessment / Learner Workbook	Summative Assessment	Learner Work Book
Plan and prepare for grader operations	1.1 Access, interpret and apply grader operations documentation	• Work health and safety legislative requirements (Page26) • Where to find Health and Safety information (Page 27) **Question** 1, 2, 3, 4, 5, 6, 93, 94	Question 1-A, 1-B, 2-E	**Knowledge assessment** Question 1-A **Practical assessment** 1-A Documentation	**Knowledge assessment** Question 1-A **Practical assessment** Practical Assessment 1 – Pre-Start
	1.2 Obtain, interpret, clarify and confirm work instructions	• The basics of road construction (Pages 14 – 18) • Operating techniques (Pages 19 – 21) • Worksite requirements (Page 31) • Calculations (36) **Question** 7, 8, 9, 10	Question 1-B	**Knowledge assessment** Question 1-B **Practical assessment** 1-A Documentation	**Knowledge assessment** Question 1-B **Practical assessment** Practical Assessment 1 – Pre-Start
	1.3 Identify hazards and environmental issues, assess the risks and implement control measures in line with workplace policies	• Earthmoving site hazards (Page 52) • Environmental management plan (EMP) • Earthmoving hazards and risks • Decibel levels of common sounds (Page 53) • Chemicals and solvents (Page 54) • Hazard controls (Page 61) • Environmental management plan (Page 62) • Earthmoving hazards and risks (Page 68)	Question 1-D, 1-E, 1-F	**Knowledge assessment** Question 1-C, 1-D **Practical assessment** 1-B Risks, hazards and control measures 1-C Personal protective equipment	**Knowledge assessment** Question 1-C, 1-D **Practical assessment** Practical Assessment 1 – Pre-Start Practical Assessment 2 – Drive and operate Grader

Element 1	Performance Criteria	Learner Guide / PowerPoint	Review Questions / Formative Assessment	Summative Assessment	Learner Workbook
Plan and prepare for grader operations	1.4 Select and wear personal protective equipment required for work activities	• Personal Protective Equipment (Page 86) • PPE examples (Page 87) • Tools and equipment (Page 94) **Question** 24, 30	Question 1-G, 1-H	**Knowledge assessment** Question 1-E, 1-F **Practical assessment** 1-C Personal protective equipment	**Knowledge assessment** Question 1-E, 1-F **Practical assessment** Practical Assessment 1 – Pre-Start
	1.5 Identify, obtain and implement traffic management signage requirements according to standard operating procedures and safe work practices.	**Question** 4, 11, 12, 13, 25, 26, 27	Question 1-I, 1-J, 1-K	**Knowledge assessment** Question 1-G, 4-A, 4-B **Practical assessment** 1-B Risks, hazards and control measures	**Knowledge assessment** Question 1-G, 4-A, 4-B **Practical assessment** Practical Assessment 1 – Pre-Start
	1.6 Select required grader tools, equipment and/or attachments and confirm suitability for work activities	• Tools and equipment (Page 94) • Vehicle fire suppression systems (Page 96) **Question** 31, 32, 33, 40, 48	Question 1-L, 1-M, 1-N, 1-0	**Knowledge assessment** Question 1-H, 1-I **Practical assessment** 1-C Personal protective equipment 1-D Select and check equipment and attachments 3-A Select, fit and test attachment	**Knowledge assessment** Question 1-H, 1-I **Practical assessment** Practical Assessment 1 – Pre-Start
	1.7 Obtain and interpret emergency procedures for graders, and be prepared for fires, accidents and emergencies	• Emergency evacuation plan (Plan 31) • Safety plan (Plan 32) • First aid and emergencies (Page 34) • PCBU/Employer's duty of care (Page 44) **Question** 6, 24, 91	Question 1-P, 1-Q	**Knowledge assessment** Question 1-J, 1-K	**Knowledge assessment** Question 1-J, 1-K **Practical assessment** Practical Assessment 1 – Pre-Start
	1.8 Coordinate and communicate planned activities with others at	**Question 24**	Question 2-C, 2-D, 2-G	**Knowledge assessment** Question 2-F	**Knowledge assessment** Question 2-F

Requirement	Learner Guide / PowerPoint	Practical Training Tasks / Formative Assessment	Practical Summative Assessment	Learner Workbook
• apply problem solving and troubleshooting techniques when operating equipment	Question 44, 45, 47	Task 2-A Prestart checks Task 2-B Level a surface Task 2-C Operate grader	2-E Operate the grader	Practical Assessment 2 – Drive and operate Grader
• monitor and manage equipment performance using indicators and alarms	Question 44, 81, 105, 113	Task 2-B Level a surface Task 2-C Operate grader	2-A Carry out pre-start checks 2-B Carry out start-up checks	Practical Assessment 2 – Drive and operate Grader
• identify common equipment faults	Question 32, 44, 47, 94	Task 2-A Prestart checks Task 3-A Use attachments	2-A Carry out pre-start checks 2-C Park and shutdown the grader	Practical Assessment 1 – Pre Start Practical Assessment 2 – Drive and operate Grader
• establish weight of load	• Principles of soil technology for civil works (Page 22)	Task 4-A Relocate the loader Task 2-B Level a surface	4-A Prepare grader for relocation	Practical Assessment 4 – Complete Operations to Spec Practical Assessment 5 –Load, unload and relocate Grader
• apply levelling techniques	• Benching (Page 71) • Laser grade control systems (Page 151) Question 50, 60, 62	Task 2-B Level a surface	1-D Select and check equipment and attachments 2-B Carry out start-up checks	Practical Assessment 4 – Complete Operations to Spec
• apply cut and fill techniques	• Taking from a stockpile (Page 21) • Benching (Page 71) Question 49, 50, 51, 62, 82, 83	Task 1-F Job plan Task 2-C Operate grader	1-B Risks, hazards and control measures 2-E Operate the grader	Practical Assessment 3 – Complete Operations to Spec.
• conduct towing of equipment/plant	Question 118	Task 2-A Prestart checks	1-D Select and check equipment and attachments 2-B Carry out start-up checks	Practical Assessment 5 –Load, unload and relocate Grader
• select and use the required tools and equipment	• Safety plan (Plan 32) • JSEA (Page 55) • Tools and equipment (Page 94)	Plan and prepare for grader operations (Page 2)	1-D Select and check equipment and attachments	Practical Assessment 4 – Complete Operations to Spec

	• PPE (Page 86) Question 1, 3, 6, 10, 11, 24, 31	Task 1-I Choose tools and equipment	3-A Select, fit and test attachment 3-B Remove, clean and store attachment	
• apply methods of changing machine attachments	Question 121	Task 3-A Use attachments	3-A Select, fit and test attachment	Practical Assessment 4 – Complete Operations to Spec
• use a range of communication techniques and equipment essential to the safe completion of work activity, including hand, audible and other signals	• Communication (Page 46) • Choosing the right communication method (Page 47) Question 26	Task 2-B Level a surface	2-D Coordinate activities with others at site	Practical Assessment 2 – Drive and operate Grader
• meet written and verbal reporting requirements and procedures associated with equipment operations	• Reporting incidents (Page 34) Question 6, 34, 44, 45	Task 2-B Level a surface	1-C Personal protective equipment 1-D Select and check equipment and attachments 2-B Carry out start-up checks	Practical Assessment 2 – Drive and operate Grader
• organise work activities to meet all task requirements	• Job safety and environment analysis (JSEA) (Page 55) Question 90	Task 2-B Level a surface Task 5-A Conduct housekeeping activities	1-A Documentation 2-D Coordinate activities with others at site.	Practical Assessment 1 – Pre Start

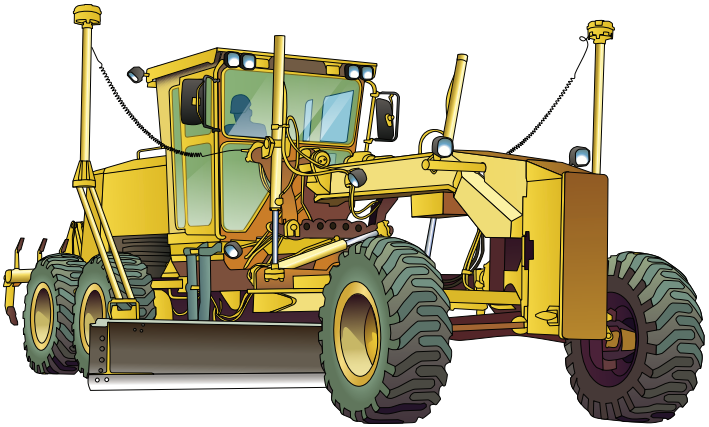
Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements and performance criteria of this unit.

Requirement	Review Questions / Formative Assessment	Knowledge Summative Assessment Learner Workbook
Key policies and procedures, legislation and established requirements for grader operations, including those relating to:		
• isolation requirements	Question 1-O, 5-C	Question 1-I
• fires, accidents and emergencies	Question 1-D, 1-P	Question 1-J, 1-K
• work health and safety, including signs of operator fatigue and how it should be managed	Question 1-P	Question 1-A
• site isolation and traffic control responsibilities and authorities	Question 4-A, 1-I, 1-K	Question 1-G, 4-A, 4-B
• project quality requirements	Questions 2-G, 4-B, 6-C, 6-D	Question 1-B
• chain of responsibility for loading and unloading of equipment	Question 4-A, 4-D	Question 3-H, 4-A, 4-B
• operational, maintenance and basic diagnostics	Question 5-A, 5-B, 5-C, 5-E, 5-F	Question 2-A, 2-B, 3-D, 5-C
• personal protective equipment	Question 1-G	Question 1-E, 1-F
• recyclable materials	Question 6-C	Question 5-B
• housekeeping activities	Question 6-A, 6-B, 6-C, 6-D	Question 5-A, 5-B, 5-C, 5-D
• machine guidance systems and laser levelling equipment	Question 2-V, 3-A, 3-A	Question 2-S, 3-A
Key factors affecting work activities described in performance evidence above, including:		
• equipment processes, technical capability and limitations	Question 2-E, 2-F, 2-H, 2-J, 2-K, 2-L, 2-M, 2-N, 2-O, 2-P, 2-Q, 2-R, 2-S, 2-T	Question 1-E, 1-I, 2-C, 2-I, 2-R

Grader

Record of Training Logbook / Verification of competency (VOC)



RIIMP0324F

Conduct civil construction grader operations

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Contents

Purpose of this logbook

This logbook is to record on-the-job training. This logbook can be used in two ways:

1. A company doing in-house training

A company can use this training logbook to show they have met their duty of care obligations under the OHS Act by showing evidence that an operator is trained and competent.

2. A registered training organisation (RTO)

A registered training organisation (RTO) delivering the units of competency from the RII Resources and Infrastructure Industry Training Package can use this logbook as part of a training program to gain a qualification.

Supervision by a competent person

The person supervising the operator must be deemed competent to supervise the training. The supervisor/trainer may hold an existing earthmoving licence or qualification, may have a Certificate IV in Workplace Training and Assessing, may have on the job experience gained over time, or any or all of these.

Using the logbook for verification of competency (VOC)

As well as being a record of training, this logbook can also be used as a document to record verification of competency.

Element/Work tasks	Description of work/training performed
PC 1.3 **Hazards and environmental issues** Identify hazards and environmental issues, assess the risks and implement control measures in line with workplace policies	*I looked around the site and found that a busy footpath was near my working area. People walking by might be at risk. I put up barricades and signs to warn people of the danger nearby.* *I then checked the grader. I checked oil, petrol and hydraulic fuel. I checked other parts of the grader. Everything was okay.*
	I had to use the grader near a trench. The trench was about 2 metres deep. No-one had put up any warning signs or barriers. I put up a row of barricades 3 metres away the trench. This would give me a safe working distance and also keep other people away from the trench.
	The job plan said that I needed to use a ripper. I fitted this attachment on the grader. *The work site is noisy. A jackhammer was being used nearby so I wore some ear muffs while I worked. I also put on other PPE including steel capped boots and a hard hat as there were safety signs telling me to wear these.*

Date/time	No. of hours	Machine details	Supervisor/competent person
Date: 3 / 01 / 2021 Start time: 10.30 am pm	40 minutes	Make: Caterpillar Model: 140H-11 Serial No: CAT0140HPAM01066	Name: Nathan Deeman Signed: Nathan D Experience/qualifications: 20 years on the job experience and Cert IV
Date: 7 / 01 / 2021 Start time: 11.00 am pm	20 minutes	Make: Caterpillar Model: 140H-11 Serial No: CAT0140HPAM01066	Name: Nathan Deeman Signed: Nathan D Experience/qualifications: 20 years on the job experience and Cert IV
Date: 8 / 01 / 2021 Start time: am 2.15 pm	30 minutes	Make: Caterpillar Model: 140H-11 Serial No: CAT0140HPAM01066	Name: Sam Hasseron Signed: S.H. Experience/qualifications: Cert IV in Training & Assessing and RII RTO Statement of Attainment in Roller.

Element 1

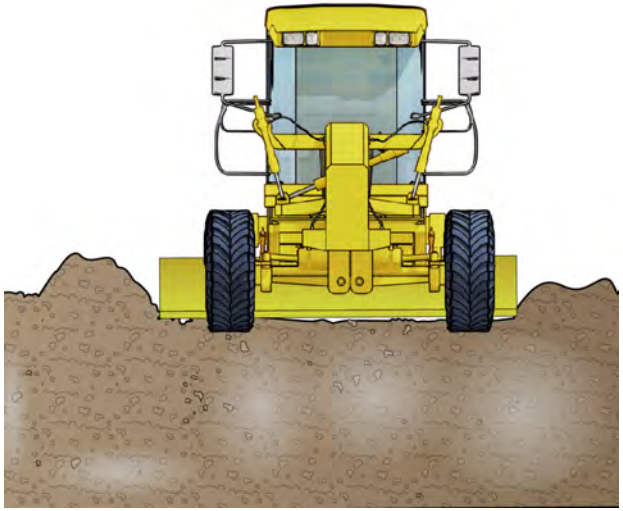
Plan and prepare for grader operations

Element/Work tasks	Description of work/training performed
PC 1.1 Access, interpret and apply grader operations documentation	

Date/time	No. of hours	Machine details	Supervisor/competent person
Date: ..... Start time: ..... am ..... pm		Make: ..... Model: ..... Serial No:	Name: ..... Signed: ..... Experience/qualifications: ....
Date: ..... Start time: ..... am ..... pm		Make: ..... Model: ..... Serial No:	Name: ..... Signed: ..... Experience/qualifications: ....
Date: ..... Start time: ..... am ..... pm		Make: ..... Model: ..... Serial No:	Name: ..... Signed: ..... Experience/qualifications: ....

Element 2

Operate grader in line with established requirements to complete work activity



Element/Work tasks	Description of work/training performed
PC 2.1 **Carry out prestart and start-up checks** in line with workplace procedures	

Date/time	No. of hours	Machine details	Supervisor/competent person
Date: ..... Start time: ..... am ..... pm		Make: ..... Model: ..... Serial No:	Name: ..... Signed: ..... Experience/qualifications: ....
Date: ..... Start time: ..... am ..... pm		Make: ..... Model: ..... Serial No:	Name: ..... Signed: ..... Experience/qualifications: ....
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