

Magazine 4B – Civil Services

This document provides a transcript for the audio in Magazine 4B – Civil Services. It includes a text copy for interviews, presenter videos and activity audio.

Slide Image	Transcript
	<p>JOBS BUILDING IN THE COMMUNITY Issue 2</p> <p>CIVIL SERVICES</p> <p>Time Management: How Wesley plans a day of excavating</p> <p>+ Learn about Pre-Start Checks</p> <p>Meet Workers Derek and Jamie</p>
	<p>Introduction to Civil Services</p> <p>Welcome to Issue 2 of Building Community</p> <p>Presenter, Introduction to Civil Services</p> <p>0:36 minutes</p> <p>Welcome to Pre-VET</p> <p><i>Hi, you're about to meet Reginald, Derek, Jamie and Wesley. They are employed in Civil Works. Civil Works helps keep the community running smoothly. They maintain roads, do construction and collect waste. This means a community has clean streets, good roads and lots of other things that help make a community work well. Let's have a listen to what they say about their jobs.</i></p>



Interview with Civil Service Team Leader

Reginald King - Civil Services Team Leader, Elsey
2:56 minutes

My name's Reg King, I'm from Katherine originally, but for the last eight years I've been living out of a little community called Yarralin. I'm currently the Civil Works Team Leader based in Yarralin. We mainly look after the main roads; you know, resheeting them, doing maintenance grading on them, and basically the parks and gardens around the community, also the day to day rubbish collections and cleaning up of the place.

I believe you do have to know how to read and write. These days with all of the new technology out there with the computers in the trucks, you have to know what you're looking at, what you're reading

And of course I've done my Cert Three, and I'm now starting my Certificate Four in it. So a lot of it's just learning on the job as well. The best way to do it is out on the job site,

I don't know, probably the most thing I enjoy about it is knowing that at the end of the day I'll know I probably achieved something that'll benefit my community,

You know, try and better yourself, be proud of yourself, who you are, where you come from, and you learn something new every day, I'd say, and keep learning, you know, it doesn't stop at school.

Like, for an example, today we had a machine break down. Everyone pitches in, so if everyone does that it's basically called teamwork and it helps to get the job done quicker so the job can move on.

[Footage of team fixing the problem.]

Right, so jobs filling within the community probably has installed a lot of pride within the community I live in. When I say pride, I say the guys working on the road have a lot of pride in what – put a lot of pride in what they do, looking after machines, building roads.

a lot of the older community elders have been coming up to me and a lot of the guys as well saying that they're excited for us in what we've been doing over the last four years, and they feel a bit of pride, and with that pride comes ownership, as well, we've been looking after our own road, and that sort of message will hopefully pass down through the ranks to the younger generations, men and women. There's nothing wrong with a woman driving a grader on our roads, we'll take anybody who's willing to



learn, have a go out there, so stay in school, get an education.

Interview with Works Officer
Derek Carter - Works Officer, West Arnhem Region
2:00 minutes

Yes, my name is Derek Carter. I'm from back in bush, outstation, but I live here and I got house, and yeah, I like to work. I'm enjoying my work I was working at the council and I was going back to art centre, and now I'm here at the shire, Western Arnhem Shire. Ah, yeah, I like to say I'm just looking after this community and I'm enjoying this big truck, and I like to stay in the big truck because they need me to looking after the bins, and the rubbish and tidying up the community, and the shop, the business.

Yeah, I'm just ready to go maybe big road trains and big trucks.

If I can learn from shire, and I can jump at other jobs, you know, like rock party, yeah.

John who told me to drive. He said, "Don't scared," you know, "you just jump in this big truck", and sometime I was nervous, you know, but I was driving.

Yeah, I love it, when maybe I come every morning I just check the oil, transmissions and radiator. That's the gas and that's why I putting the water on, move out to - I ready to work.



Interview with Assistant Team Leader
Jamie Yibarbuk - Assistant Team Leader, West Arnhem Region
2:59 minutes

My name is Jamie Yibarbuk, and I'm from Maningrida.

My job is work with the shire. I do parks and garden as supervisor for my team. I drive heavy machineries, front end loader, backhoe. I've learned to do slashing, bulldozing, grading.

First thing that I have to do is safety gear. If you're doing your job, just check community is safe and our workplace safe.

Enjoying it, driving the big machineries. Yeah, feel happy when you lifting up, putting up stuff, taking the stuff, digging stuff, yeah.

Stay at school, get more educated, look after our people and one day might step up and probably you'll be the youngest one at the front for us, support our community.

Yeah, for me, before I come into this job, I learn everything from the

*course, and open my mind to think on the job and go forward. It very important to keep your mind open and go forward.
For me it's looking at the job, doing the job right, taking care of our boys, taking care of the job, looking after machineries, looking after vehicle.
That's when the job went easy for me.*

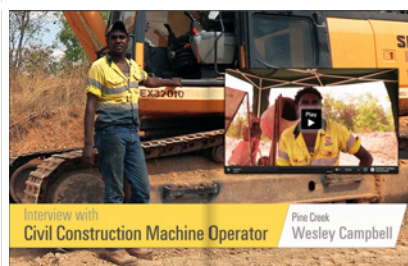
Then later on I'm going to start around my own landscaping business in community, so kids can follow up, they can train and get jobs or find their own business.

*All my skills that I learnt here will help me to do my business.
When I kept working, working, working, this job just went straight for me, and yeah, finally I find the easy way for me now.*

End of the day, I feel fresh, happy, I'm just like a boss.

Interview with Apprentice Civil Operations

Wesley Campbell - First year apprentice in Civil Construction Machine Operation, Elsey Region
1:46 minutes



Hi, I'm Wesley Campbell, I'm from Yarralin community. I'm here in Pine Creek

I work for Shire, Vic-Daly Shire Council and I do civil works, driving heavy machinery, like grader, loader, excavator.

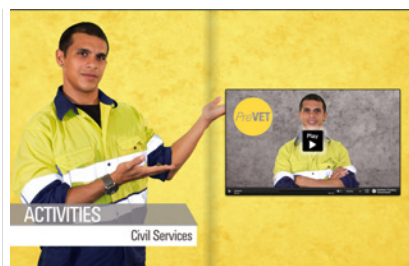
Some of my responsibilities are to look after the equipment, and before I get on the grader, you have to pre-start. Its important because you don't have any problem later on.

Every time when I'm on the job I always after the work write it down on the notebook, what I did, going back, reading it, getting experience from what I was doing. Its part of my job, responsibility for what I am done.

I started my apprenticeship last year. As part of my training I'm learning to use all the different machine, not only for driving but to operate.

What I'm enjoying is go out to another places and making new friends and seeing other country.

Stay healthy, stay out of drugs, grog, smoke and trouble.



ACTIVITIES – Civil Services
Activity Introduction
00:21 minutes

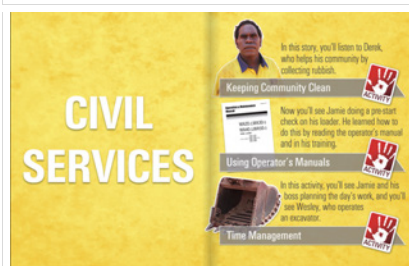
Now you'll have a go at doing some of the things the Civil works team does.

You'll read a map and schedule.

You'll help Jamie find the steps to checking his loader is working safely before he starts work for the day.

You'll also help Wesley calculate how long his job in the excavator will take so he can plan his work for the day.

Let's have a go.

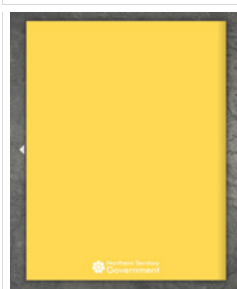


CIVIL SERVICES

Keeping Community Clean – In this story, you'll listen to Derek who helps his community by collecting rubbish.

Using Operator's Manuals – Now you'll see Jaime doing a pre-start check on his loader. He learned how to do this by reading the operator's manual and in his training.

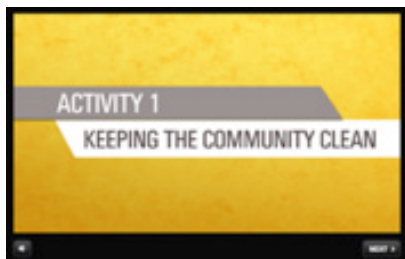
Time Management – In this activity, you'll see Jaime and his boss planning the day's work, and you'll see Wesley, who operates an excavator.



Northern Territory Government logo

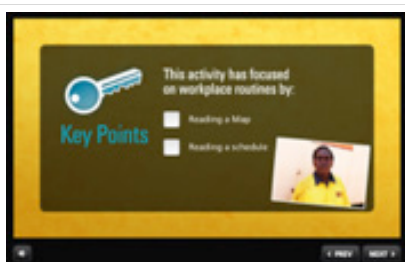
Slide Image

Activity A1 Keeping The Community Clean



ACTIVITY 1 Keeping the Community Clean

In this story, you'll listen to Derek, who helps his community by collecting rubbish.

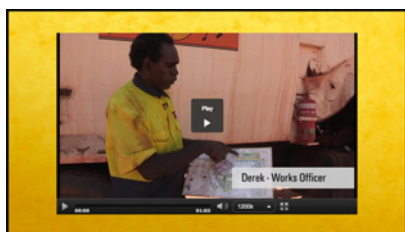


Key Points

This activity focuses on workplace routines:

- Reading a map
- Reading a schedule
- Using a map and schedule to find daily collection requirements and route options.

Sticking to the schedule and collecting rubbish from the same places every week helps to keep the community clean



Derek – Works Officer

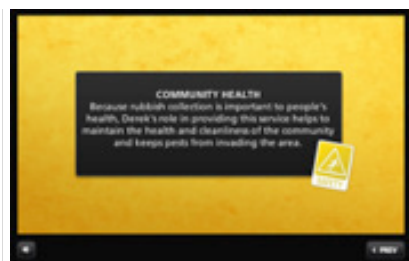
1:03 minutes

[Pointing out map locations to camera.]

So this one is every morning; that's – I'm just doing every Monday, just doing that business, these ones; and purples, I'm doing it site camps area; and yellow ones are site camp two, but site camp one and site camp two, and that new side, all new houses, back in new side, and this – airport road, light yellow. I'm doing that airport road. That's why when normally sometime we use this one, and sometime we didn't use, because we know how, our brains, you know



Derek's valuable work in the community depends on how well he knows this map and remembers the schedule. Each day of the week, Derek visits the areas of the community which need rubbish collection. The schedule is in the table here.



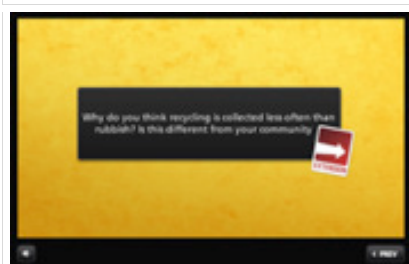
Safety Tip

Community Health

Rubbish collection is important because it stops pests and disease spreading. Derek is helping his community stay healthy by providing this service.

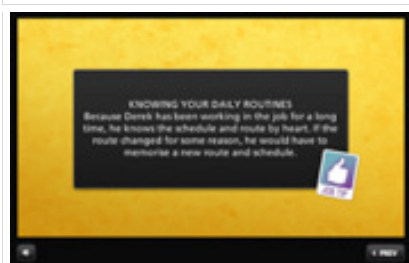


Other communities have different schedules, and some have calendars like this one. Notice, that there are Rubbish Collection days every week, and recycling collection days every fortnight.



Extension Tip

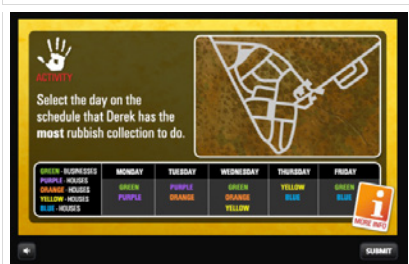
Why do you think recycling is collected less often than rubbish?
Is this different from your community?



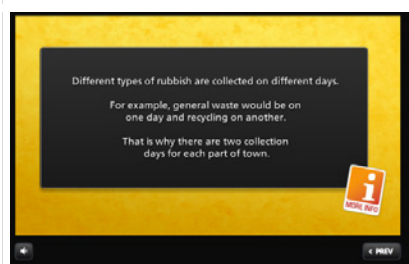
Job Tip

Knowing your Daily Routines

Because Derek has been working in the job for a long time he knows the schedule and route by heart. If the route changed for some reason, he would have to memorise a new route and schedule.

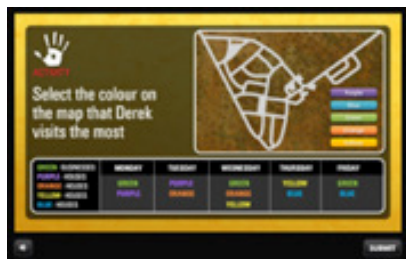


Select the day on the schedule that Derek has the **most** rubbish collection to do.

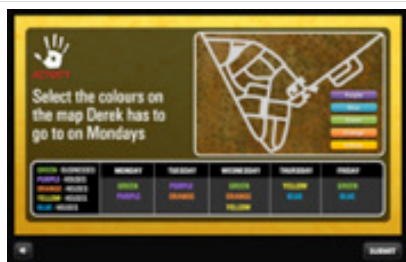


More Info

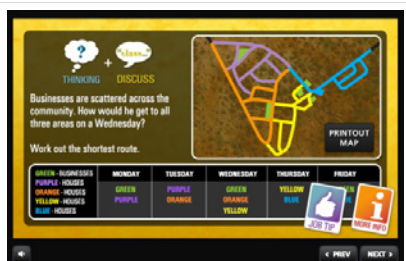
Different types of rubbish are collected on different days.
For example, general waste would be on one day and recycling on another.
That is why there are two collection days for each part of town.



Select the **colour** on the map that Derek visits the most.



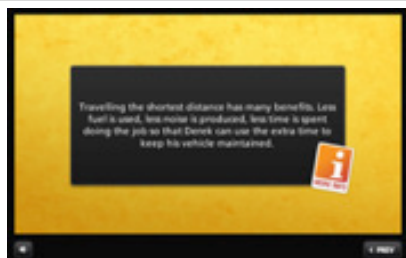
Select the **colours** on the map Derek has to go to on **Mondays**.



Thinking + Discuss

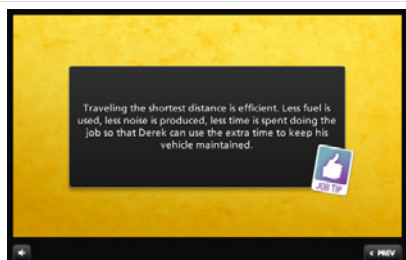
Businesses are scattered across the community. How would he get to all three areas on a Wednesday?

Work out the shortest route.



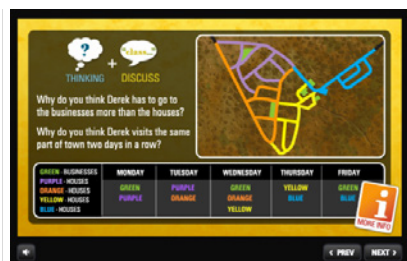
More Info

Look for a route that takes you up and down the same street the smallest number of times. Remember that streets with houses on both sides require you to go up and down the street in opposite directions.



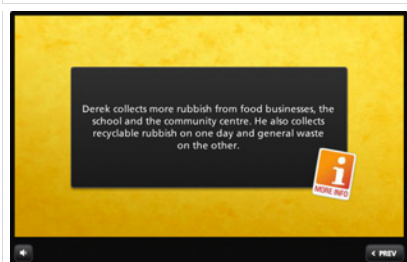
Job Tip

Travelling the shortest distance is efficient. Less fuel is used, less noise is produced, less time is spent doing the jobs so that Derek can use the extra time to keep his vehicle maintained.

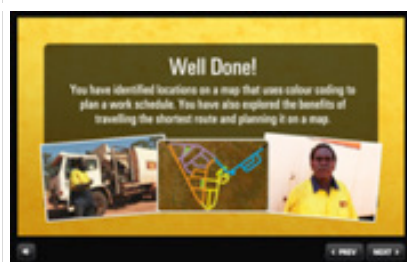


Thinking + Discuss

Why do you think Derek has to go to the businesses more than the houses? Why do you think Derek visits the same part of town two days in a row?



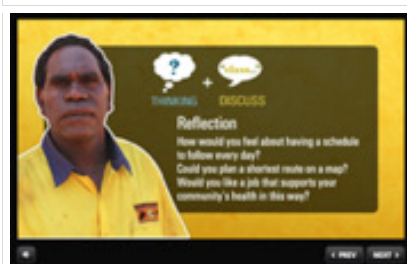
Derek collects more rubbish from food businesses, the school and the community centre. He also collects recyclable rubbish on one day and general waste on the other.



Well Done!

You have identified locations on a map that uses colour coding to plan a work schedule. You have also explored the benefits of travelling the shortest route and planning it on a map.

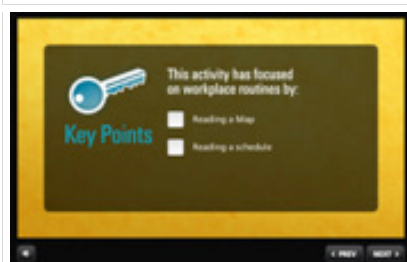
Routine is very important to Derek and the community relies on him to collect the rubbish on the set days. You've read Derek's schedule and seen how he uses the map to plan his route each day. You have looked at the benefits of travelling the shortest route. Knowing these kinds of things helps Derek do his job more efficiently and quickly.



Thinking + Discuss

Reflection

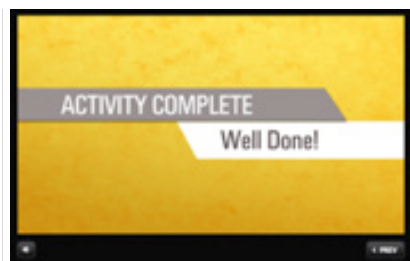
How would you feel about having a schedule to follow every day?
 Could you plan the shortest route on a map?
 Would you like a job that supports your community's health in this way?




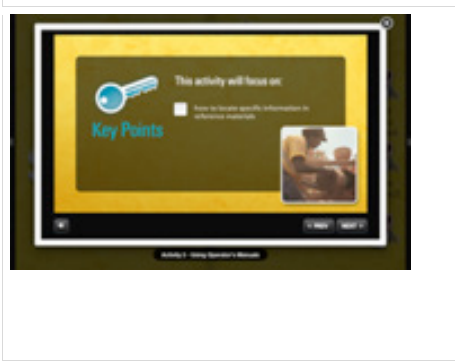
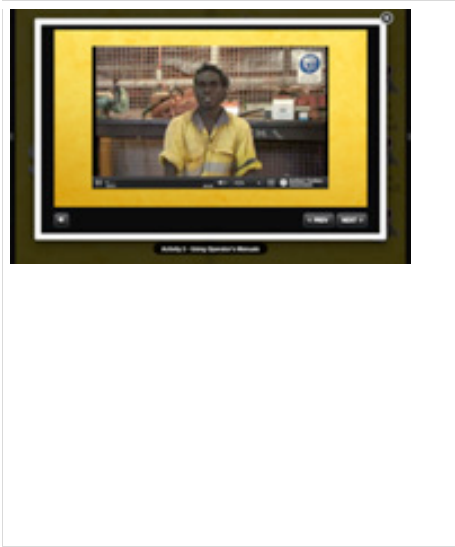
Key Points

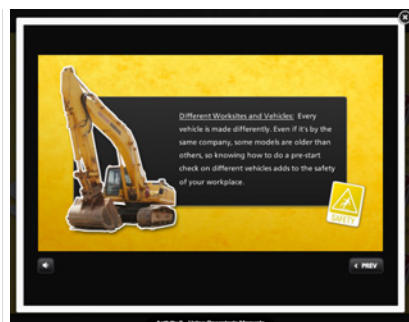
This activity has focused on workplace routines by:

- Reading a map
- Reading a schedule
- Using a map and schedule to find daily collection requirements and route options.



Activity Complete
Well Done!

Slide Image	Activity A2 Using Operator's manual
	<p>ACTIVITY 2 Using Operator's Manual</p> <p><i>Now you'll see Jamie doing a pre-start check on his loader. He learned how to do this by reading the operator's manual and in his training.</i></p>
	<p>Key Points</p> <p>This activity will focus on:</p> <ul style="list-style-type: none"> How to locate safety check instructions in an operators manual <p><i>Because the safety of Jamie and the vehicles are important, this is a procedure that has to be followed every time you start a job. Listen to how Jamie talks through the steps of the check on his loader.</i></p>
	<p>Jamie – Assistant Team Leader. Pre-start check 2:04 minutes</p> <p><i>Before going out we do a pre-start on our machineries. Look after our vehicle, the vehicle will look after us. First of all that we will do, grease it up, grease our loader before using it, and over here, check on the tyres, and check the oil, which is over here. Check my belt – yeah, just to feel our belt if it's tight or loose, yeah. The oil, it's engine oil, pretty much full, yep. That's a air filter, air filter we need to check before using it. If its clean after work, take it out, take the dust out, put the filter in then it will be ready for tomorrow – next job. Yep. It's pretty much clean, just the air filter. We get air pressure, blow this up, to get the dust out, just – lots of dust [slapping dust away], yeah.</i></p>
	<p><i>When Jamie was getting his training certificates, he learned all about a pre-start check from the operator's manuals and from his trainers. Making sure the vehicle is in good working order is safe, and good practice for Jamie as the operator.</i></p>

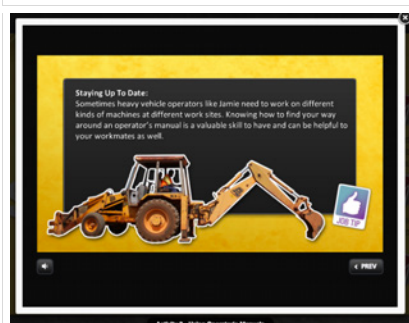


Safety Tip

Different Worksites and Vehicles: Every vehicle is made differently. Even if it's by the same company, some models are older than others, so knowing how to do a pre-start check on different vehicles adds to the safety of your workplace.



To read about the pre-start check in this manual, Jamie needs to locate the information. There are 195 pages in the Loader manual alone, so finding the right page is important. This is what the Contents Page is for. You can see that under both the safety heading and the operation heading, there are sections about 'before starting the engine.' Let's look at safety first.



Job Tip

Staying Up To Date:

Sometimes heavy vehicle operators like Jamie need to work on different kinds of machines at different work sites. Knowing how to find your way around an operator's manual is a valuable skill to have and can be helpful to your workmates as well.



To find the safety section, we scan through the main headings in capital letters, and subheadings in bold letters. Here's a section under precautions about 'before starting the engine.' It's section 7, part one, on page 1 dash 7.



Thinking + Discuss

What can you see in the safety page about 'Before Starting Engine'?

You can see on page 1 dash 7 the safety reason for doing a pre-start check. It is to prevent fires caused by flammable liquid leaks. We need to go to the 'operation' section 12.1.1 for instructions on the 'walk around check.'



Activity

Use the contents to find the page number for the Pre Start Check Jaime does before starting the engine. Click on the page number.



More Info

How manuals are organized:

Each Subheading in the Contents reads 'Safety', 'Operation'. And 'Maintenance'.

As an operator, Jaime's pre start check is a safety measure but it is also an operations measure.



Activity

Scan the headings to find the steps in the procedure below that tells Jamie to check the tires?



Activity

Jamie also checked the oil levels. Find the step that gives this instruction that Jamie is following in the picture.



Activity

Jamie checked the tightness of the belts in the engine. Which step was he following?



'Excessive play' means that something is loose, wobbly or not tightened.



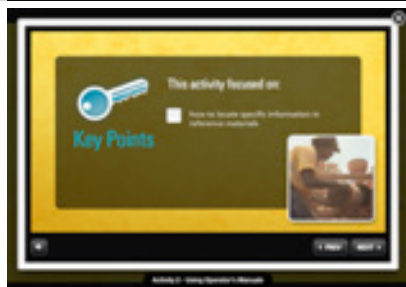
Activity

Jamie took out the air filter and checked for dust in it. What other parts are checked for dirt and dust?



Activity

Put Jamie's steps in the same order as they appear in the manual.



Key Points

This activity focused on:

- How to locate safety check instructions in an operators manual

Well done!

You've used the contents pages and numbering system in a manual to find a pre-start check. You also located each of Jamie's pre-start check steps in the manual, and may have found a few more.

These steps and sections of a manual are numbered to help find information and use it.



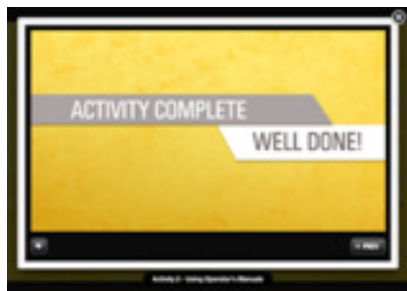
Thinking + Discuss

Reflection

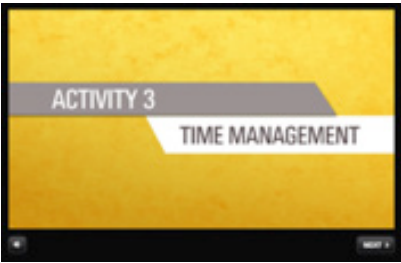
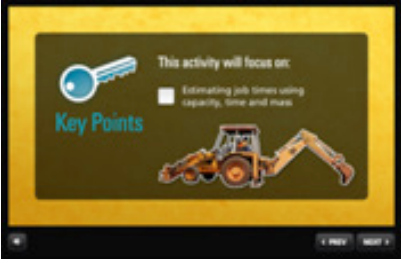
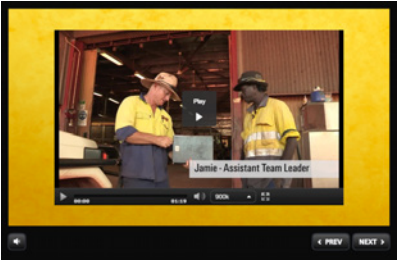
Would you enjoy operating a loader and taking care of it?



Would you be good at following steps in the pre-start check?

Could you find information in a manual if you needed to?



Activity Complete
Well Done!

Slide Image	Activity A3 Time Management
	<p>ACTIVITY 3 - Time Management</p> <p><i>In this activity, you'll see Jamie and his boss planning the day's work, and you'll see Wesley, who operates an excavator.</i></p>
	<p>Key Points</p> <p>This activity focuses on:</p> <ul style="list-style-type: none"> Estimating job times using capacity, time and mass
	<p>Time Management 1:19 minutes</p> <p><i>Unknown male: Jamie.</i></p> <p><i>Jamie Yibarbuk: Yo.</i></p> <p><i>Unknown male: Boss seen me, we got three main jobs on today for your crew.</i></p> <p><i>Jamie Yibarbuk: Yep.</i></p> <p><i>Unknown male: Everyone else will be out doing their jobs, but for you and Darcy we've got slashing at the power station, the push-up at the tip, and also got that flooded out area near the airfield that needs doing as well. What would you like to get onto first?</i></p> <p><i>Jamie Yibarbuk: I'll take the airport job.</i></p>

	<p><i>Unknown male: Airport job's yours, yeah, alright. Just probably do the tip after that.</i></p> <p><i>Jamie Yibarbuk: Yep.</i></p> <p><i>Unknown male: When you got time, that slashing can wait, so that'll all work out.</i></p> <p><i>Jamie Yibarbuk: Yep.</i></p> <p><i>Unknown male: That's you pretty full for the next day or so. Got all your safety gear?</i></p> <p><i>Jamie Yibarbuk: Yep, I got safety gear, got Darcy, water, hats, boots, yep.</i></p> <p><i>Unknown male: Yeah, don't forget to take first aid kit.</i></p> <p><i>[does itinerary with Darcy and signs out first aid kit]</i></p>
	<p>Planning Work</p> <p><i>Jamie would have known how long each job would take and the tasks involved in completing it. This helps Jamie decide which job to do first.</i></p> <p><i>Next you'll see Wesley talking about operating an excavator. Listen for how he describes how much the excavator bucket can hold and how he moves loads of gravel from one place to the next.</i></p> <p><i>Knowing these things helps Wesley know how much time he will spend on a job.</i></p>
	<p>Wesley – Time Management 3:12 minutes</p> <p><i>If I'm on the big excavator it's give me, save me more time to do the job fast and quick and easy, eh, because it's a big excavator, but if you have a small one it's going to take more less. But that depends on the load dumping and stuff.</i></p> <p><i>So it's for me to know how much the bucket can carry and the weight and stuff, tons. Yeah, I know the big excavator, it can take a half a ton a scoop.</i></p>

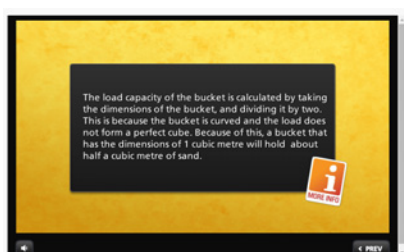
	<p><i>I'm about to jump onto excavator. What I'm basically going to do is grab a gravel and to put it down there, over where the culvert is.</i></p> <p><i>Before starting the excavator I'm putting a seatbelt on.</i></p> <p><i>[closed door]</i></p> <p><i>Use this lever here to lift it up.</i></p> <p><i>Always gotta look around when you turn or move your excavator just in case, safety for yourself and others.</i></p> <p><i>Now I'm just about to grab the gravel here and start dumping down there at the culvert.</i></p> <p><i>Always keep your eye on the bucket, just in case. Just before you're dumping it make sure check for any persons, stuff. Spread it, spread it, make sure put it on the other place too, other spot, make it more easier. This way you make it easier for the small excavator to start leveling it.</i></p> <p><i>Always tilt your bucket towards you, that way it's more easier to turn.</i></p> <p><i>Just don't push the lever hard on the gravel when you're getting, make sure you get the dirt on top, not the one underneath otherwise you push it too hard you'll tip or something, or you'll spin around. Make sure you've got your seatbelt on.</i></p>
	<p>Dimensions</p> <p><i>When Wesley was lifting the gravel from the pile, he knew that the dimensions of the excavator's bucket was 1 metre deep, 1metre wide, and 1metre high.</i></p>
	<p>Volume or Capacity</p> <p>Wesley said that the bigger excavator can do a job in half the time of a smaller one. This is because the bucket is bigger and it can lift larger loads than smaller excavators. The bucket is not a perfect cube, though.</p>



Load Capacity

The **shape** of the bucket reduces the load capacity to be **half** of what the dimensions might suggest, so a bucket with these dimensions can carry 0.5 cubic metres of material.

In order to figure out how long the job will take him, Wesley needs to know the load capacity of his bucket before he starts lifting.



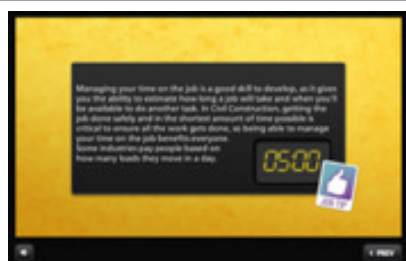
More Info:

The load capacity of the bucket is calculated by multiplying the dimensions and dividing it by two.

$$L \times W \times H \div 2$$

This is because the bucket is curved and doesn't form a perfect cube.

A bucket that is 1m x 1m x 1m will hold about half a cubic metre (0.5m³) of sand.



Job Tip:

Managing your time on the job is a good skill to develop. It allows you to estimate how long a job will take and when you will be able to do the next task.

In civil construction, you need to:

- be safe
 - be quick
- to get the job done.

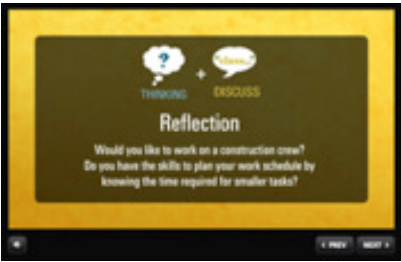
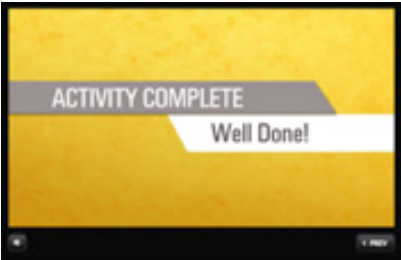
Managing your time helps everyone.

Some industries pay people based on how many loads they move in a day.

	<p>Activity</p> <p>With a load capacity of $\frac{1}{2}$ a cubic metre, how many loads will it take for Wesley to move a 45 cubic metre stockpile? Type the answer into the column.</p>
	<p>Class Discuss</p> <p>In his training, Wesley would have learned how the mass of different materials change, even when the same volume is used. Why do you think the same volume of materials would have different masses?</p>
	<p>Safety Tip:</p> <p>Knowing A Safe Working Load</p> <p>Knowing the safe working load of an excavator bucket will help prevent an accident. The project manager will tell operators or write it on the job plan the operators read before starting.</p>
	<p>More Info:</p> <p>Density</p> <p>Materials can have different masses, even if their volume is the same. Think about wet sand – it is the same size but it has water in between the sand rather than air. This makes it heavier than dry sand.</p>
	<p>Extension Activity:</p> <p>Complete the table to show the mass of all of the loads.</p>

	<p>More Info: Dry Stockpile: $90 \text{ loads} \times 1.3 = ?$ Wet Stockpile: $90 \times 1.5 = ?$</p>
	<p>Work Cycle</p> <p><i>Working out how long the job will take also depends on the work cycle Wesley is using. If the excavator has to swing $\frac{1}{2}$ a circle like in the video, one cycle takes 20 seconds. If Wesley knows how many loads the job will use, plus how many work cycles it's going to take, he can work out how long the job will take.</i></p>
	<p>More Info:</p> <p>These work cycles would take about 60 seconds, or one minute. Use this information when you are calculating how long bigger stockpiles will take to move.</p>
	<p>Thinking + Discuss</p> <p>If Wesley needs to lift 90 buckets of sand to move the stockpile into the culvert and each work cycle takes about 20 seconds, how long will the entire job take Wesley to complete?</p>
	<p>Activity:</p> <p>If Wesley uses a bucket with the dimensions of 2m x 1m x 1m instead, what will be the load capacity?</p>

	<p>Activity:</p> <p>If Wesley has to move 65 cubic metres of wet sand, how many bucket loads will he need to use?</p>										
<table border="1"> <thead> <tr> <th>VOLUME AND MATERIAL</th> <th>WEIGHT</th> </tr> </thead> <tbody> <tr> <td>1 cubic metre of water</td> <td>1.0 tonne</td> </tr> <tr> <td>1 cubic metre of sand (dry)</td> <td>1.3 tonne</td> </tr> <tr> <td>1 cubic metre of sand (wet)</td> <td>1.5 tonne</td> </tr> <tr> <td>1 cubic metre of earth</td> <td>1.8 tonne</td> </tr> </tbody> </table> <p>Options: 22.5 tonnes, 65 tonnes, 97.5 tonnes, 117 tonnes.</p>	VOLUME AND MATERIAL	WEIGHT	1 cubic metre of water	1.0 tonne	1 cubic metre of sand (dry)	1.3 tonne	1 cubic metre of sand (wet)	1.5 tonne	1 cubic metre of earth	1.8 tonne	<p>Activity:</p> <p>If Wesley has to move 65 cubic metres of wet sand, what will the total weight be?</p>
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	<p>Extension Activity</p> <p>If Wesley got paid by how much sand he moved in a day, how much would he make if he was paid \$2 a tonne?</p>										
	<p>Activity:</p> <p>How long will the whole job take Wesley to complete if he uses a $\frac{1}{2}$ circle work cycle? Remember he needs to perform $65 \times 1\text{m}^3$ loads.</p>										
	<p>Extension Activity:</p> <p>If he reduced the work cycle to $\frac{1}{4}$ of a circle, how much time would the job take to complete?</p>										
	<p><i>Well Done!</i></p> <p><i>You have estimated the length of time a job will take to complete based on capacity of the machinery and time spent on each part of the job. This skill is very useful in helping to plan a days' work and complete jobs within a desirable time frame.</i></p>										

	<p>Thinking + Discuss</p> <p>Reflection</p> <p>Would you like to work on a construction crew?</p> <p>Do you have the skills to plan your work schedule by knowing the time required for smaller tasks?</p>
	<p>ACTIVITY COMPLETE</p> <p>Well Done!</p>