Home Learning TV: Junior Maths Day 13

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| Title for segment: | Spend or save? | | | |
| Year levels *(e.g. Yrs1 – 3)*: | Yr 1-3 | | | |
| NZC learning areas: | Mathematics - Patterns and Rates | | | |
| Purpose of lesson:  (What learners will learn) | Learning to solve problems involving rates | | | |
| Success Criteria – students will be able to:  (how they will know when they have learnt it) | Learners will be able to:  notice notice patterns and relationships between numbers and apply these to solve problems  use counting and grouping strategies to solve problems involving rates.  justify their thinking using the word because.  interpret and represent their thinking on an earnings table. | | | |
| **Segment content/context details *(as appropriate)*** | | | | |
| Māori specific content i.e. the learning draws on Mātauranga Māori: | bk Whanaungatanga - kinship. | Pacific specific content i.e. the learning is focused on Pacific knowledge: | | Family, reciprocity, respect, collectivism and belonging. |
| **Segment production details** | | | | |
| Equipment requirements: | Whiteboard and powerpoint. | | | |
| Copyright requirements:  Please be specific: Source(*Seven Sizzling Sausages* by Sam Smith –url link to the source), intended use (to demonstrate alliteration), and length (timings for video clips) |  | | | |
| **Segment links and attachments *(list all links to recordings or attachments, the source and confirm that copyright permissions are granted)*** | | | | |
| Links to recordings /resources |  | | | |
| Attachments |  | | | |
| **Segment plan content** | | | | |
|  | Teaching and learning activities linked to purpose | | High level script (key points/questions) | |
| **Activate**: Activating prior learning, knowledge of contexts and relationships | Greeting and introduction to the lesson.  Introduce warm up.  Give think time. Remind students to justify their thinking.  Show Slide 2  Discuss pattern found in number string.  Compare - make connections.  Generalise number facts.  Extending the pattern.  Introduce next string.  Notice difference in patterns.  Show and explain pattern. Briefly touch on ten times bigger.  Show Slide 3  Link to practical application.  Link to patterns. | | Kia ora e hoa. It’s great to see you for maths today. First let’s warm up our maths brains!  Have a look at these number sentences. What do you notice? Turn and talk to someone at home and tell them what you see.  Can you finish the last number sentence? Make sure you use the word because to explain your thinking! [give 15 sec think time]  What did you notice? Did you see the pattern?  Let’s have a look together.  I can see that 1 + 1 = 2.  The next number sentence says 11 + 1 = 12. What is the same in both of these number sentences? [quick think]  Tumeke! That’s right! They both have a 2 in the one’s place.  When I look at all the answers in this number string I can see that they all have a 2 in the ones place and that each number is also increasing by ten. Did you work out the last one?  Tino pai. [well done] It is 42.  If we had 101 + 1 what would it be? That’s right, it would be 102!  Let’s do one more. Here it is. Have a look and tell someone at home what you notice. [think time]  Look! I can see that 1 + 1 = 2. This is how our last number string started. But is the pattern the same? What did you notice?  Look at the next one, 10 + 10 = 20. What is the same in both of these number sentences? They both have 1 and 1 which makes 2 and 1 ten and 1 ten makes 2 tens [write on board].  I also noticed that each answer is ten times bigger than the one before.  Let’s have a look at the next number sentence. It says 100 + 100 = ? What do you think the answer is? Ka pai, it is 200 because we know 1 hundred + 1 hundred = 2 hundreds and I noticed that these numbers are 100 times bigger than the first number sentences here [point].  Using this pattern, what do you think the answer to 1000 + 1000 would be? Ka pai, it is 2000.  How does knowing this help us? [think time].You’re right. If we know one fact, we can use it to help us solve other problems with the same or similar numbers. Maths is all about patterns. When you can notice and use these patterns, mathematics becomes more accessible and fun. | |
| **Learn**: Introducing learning  Reinforce routines, provide multiple exposure to concepts, and strategies. Scaffolding learning | Introduction of new learning  Launch of task  children solve  Presenter models how to solve.  Brings in table representation.  Show slide 4  Launch of task  children solve  Jahvani $ 2 + $2 = $4  Presenter models how to solve.  Tevita $4 + $4 = $8  Show slide 5.  Brings in table representation.  Connection made to identify patterns and relationships between numbers. | | Today in maths we are going to learn about:   * the patterns we can find * how we can use these patterns to solve other problems * and the rate of money earned per hour   We are going to think about Jahvani and Tevita, who go to help Grandad in his garden each Saturday. They spend time sweeping the paths, weeding the garden, and planting vegetables. What are some of the jobs that you help out with at home? Do you earn pocket money for doing them? [think time].  Jahvani and Tevita earn pocket money. For every hour that they work, Grandad gives them $2. This is a rate of $2 per hour. Jahvani only works for an hour each Saturday, but Tevita works for 2 hours. Grandad pays the boys the money they have accumulated after one month.  How much money would each of the boys have after one day’s work? [think time].Tino pai! That’s right. After one day’s work Jahvani would have earnt $2. Because Tevita worked for two hours, he will have earnt $4, because we know  Let’s keep track of how much the boys are earning using a table. Let me show you. [slide 4] This table shows the day [point] and how much each of the boys have earnt **in total** [point]. We can see that Jahvani has earnt $2 and Tevita has earnt $4 after the first day.  The next Saturday the same thing happens. Jahvani works for one hour and Tevita works for two. Can you work out how much money the boys will have earnt **in total** after the second day? [think time]  Tumeke! Great thinking! Let’s look at how much money Jahvani will have earnt. We know he worked for one hour and earned another $2. So $2 + $2 = $4. [write equation on board] Jahvani now has a total of $4.  Tevita worked for two hours which we know is $4. He now has a total of $8 because $4 + $4 = $8. [write on board] So now the table will look like this [slide 5].  Look carefully at the table now. Do you notice any patterns? I’ll give you some time to talk to someone at home about what you think [30 seconds think time].  Ka pai Tamariki ma - that’s right! Did you notice:   1. Javahni’s total is increasing by $2 each day 2. Tevita’s is increasing by $4? 3. You may also have noticed that Tevita’s total earnings is double the amount of Javahni’s.   Wowee! Three different patterns. | |
| **Respond**: Providing opportunities to use and practice | Launch of task  Children solve  Presenter models how to solve.  Presenter writes on board:  Jahvani  $2 + $2 + $2 + $2 = $8  4 x $2 = $8  $2, $4, $6, $8  Tevita  $4 + $4 + $4 + $4 = $16  4 x $4 = $16  $8 + $4 + $4 = $16.  Double $8 = $16.  Brings in table representation. Show Slide 6, 7, 8  Extending and connecting.  Connection made to different ways to solve and patterns and relationships discussed previously.  Links back to purpose/message of the lesson. Spending or saving. Reflection of purpose/message. Spending or saving.  Re-state the success criteria | | Here’s a challenge for you. If the boys continue working at the same rate, how much money would they have earned after four Saturday’s of work? Can you use the patterns we have noticed to help you?  I’ll give you some time to have a go at working that out. Perhaps someone at home could help you. think time  Ka pai! That was a bit tricky! Did you work it out? Let’s do it together now. We know that after four weekends Jahvani would have worked a total of 4 hours, because he works one hour each Saturday.  Did you work out his total earnings by adding like this  $2 + $2 + $2 + $2 = $8  This is the same as 4 x $2 = $8  You might have continued the pattern by skip counting in 2s like this –  $2, $4, $6, $8  So Jahvani has earnt a total of $8.  Now let’s look at Tevita’s earnings. We know that after four Saturday’s Tevita will have worked a total of 8 hours, because he works two hours a day and we know that 4 x 2 hours = 8 hours. How did you work out his total earnings?  Did you  add $4 + $4 + $4 + $4 = $16?  know that this was the same as 4 x $4 = $16  You may have continued the pattern by going $8 + $4 + $4 = $16.  Or, you may have remembered that Tevita earns double the amount that Jahvani earns.  So if we double $8, we get $16.  Wow, there were so many ways that we could work that out! Noticing patterns or the relationships BETWEEN the numbers in maths is so helpful! Have a look at the table and how the numbers grow.  So far, the boys have saved their money, which means they haven’t spent any. If you had earned some money, would you save it or spend it? [think time].  Tevita has more money because he chose to work for longer than Jahvani. Even though they were paid the same rate each hour, he earned more money in total each day. With Grandad paying them once a month, rather than after each Saturday, this meant that the twins could do more with their money.  We have explored different ways to solve rate problems. In our problem today the rate was how much money you earn per hour. When we solve problems like this we need to  Remember To:   * look for patterns and relationships BETWEEN the numbers * use a table to record | |
| **Share**: Learner and parent reflection on learning and engagement and what they can do next | Recap of learning intentions.  Recap and discussions of rates and when these are used in our lives.  Opportunities for students to discuss after the lesson | | Think about the jobs that you do around the house and any pocket money you earn, are you going to save some money or will you spend it at the shops?  OR when you are driving with your family, you might also notice another rate - kilometres per hour. How far you go in one hour driving at a certain speed.  I’d love to see your solution - you can email me at info@hltv.co.nz or text to 5811 - just don’t forget to put Suzy as the subject!  Ka kite - see you next time! | |