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| **Digital Sandpit Grade 2 2018 3 Lesson Rundown**  **Dash & Dot** |
| **General Information:** |
| This set of three lessons have been put together, assuming the students have used Dash before, maybe in Sandpit activities last year. You might need to check with them if they have used them before, and adjust the lessons accordingly (maybe also get a copy of the Grade 1 version of this doc!!). In 2018, there should be more structure and less ‘free play’ with the Digital tools.  *The best app to use for the younger students is* ***Blockly*** *– check it is downloaded on the iPads you plan to use with the students. All their programs are automatically saved to the app, therefore it is important that they use the same iPad each lesson – record which iPad they use (numbered) and ensure they use the same one each time.*  If you get a chance, it would be helpful to borrow one of the Dash robots, and have a play with it using the Blockly app, so you can see what sort of things the students will be doing, and where they might have problems / difficulties.  If you need more ideas / activities / suggestions – look for the Dash and Dot display folder that should be stored in the big Dash & Dot tub – there are lots of ideas in the folder. Plus, if you find and print out any activities, please leave a copy in the folder for other teachers to use.  There are also a few pages labelled ‘trouble shooting’ – great place to start if you encounter problems.  *Please keep everything in the tub neat and tidy. If you use the last of the masking tape, could you let Chris / Lisa know or replenish it yourself. Also let us know if you need specific things added to the tub in order to complete some of the activity cards (as I have not checked every card). Please don’t let students take / keep any of the toys / things form the tub!!!*  *Lisa Connell* |
| **Session One:** |
| **Learning Intentions:** *To be able to independently get Dash working via the Blockly app*  *To be able to complete puzzles with a partner using the Blockly app*  **Success Criteria:** *On the iPad, I can turn Bluetooth on, I can connect the iPad to the correct Dash robot. I can work cooperatively with a partner to solve puzzles with the Blockly app*    **I Inspire:** 2-5mins Teacher directed, a quick intro: Ask them what they can remember about using the Dash robot. “We are going to use the Blockly app (show them what the app icon looks like) and connect it to one of the Dash robots.’  **T Try:** 3-5mins Students work with a partner, see if they can turn Bluetooth on, find and open the Blockly app, connect Dash to the iPad. Teacher observes, without getting involved in the student process, watch for any errors or misconceptions.  **E Expand:** About 10mins ‘Tech Talk’, Students share what they have discovered. Teacher dispels any incorrect information, specifically teach how to connect Dash to iPad (for any students that couldn’t do it). When in Blockly, make sure they are in the Puzzles section (if not, click on the 3 orange lines in the top L hand corner and then select **Puzzles**). Also use this time to explain / demo the next part of the lesson:  I would have colour photocopies of the Blockly Dash Puzzle Tracker – 1 between 2. Students can put their names on the top, and tick off the puzzles that they complete in the Blockly app, save until next week  **C Create:** 25mins Set students off to work with their partner, puzzle tracker, Dash and iPad. Encourage students to work together cooperatively, taking in turns, sharing ideas to solve the puzzles. When successful, tick the check box next to the activity, to show you have completed it. Teacher to rove around, see how the students are going, if they need any help. They might need help reading the instructions  **H Huddle:** 5mins Come back together as a group, share something you learnt / discovered / had trouble with. Where did you get to on the Puzzle Tracker? Get them to check which iPad they are using, and let them know they need to use the same one next week so they can go on with where they finished up today.  Review the success criteria with the students – did you achieve them? If not, why not? |
| **Session Two:** |
| **Learning Intentions:** *I can explain the terms ‘sequence’ and ‘debugging’. I can debug errors in my sequences of instructions.*  **Success Criteria:** *I can explain what a sequence is, and give examples. I can explain what ‘debugging’ means and give an example I encountered today. My partner and I can find and fix simple errors in our coding sequences.*  **T Try:** 3-5mins Give out iPads (same one as last week), Dash robots and Puzzle Tracker sheets.  Students work with same partner as last time. Encourage them to get Dash up and running, ensure blue tooth is turned on, open Blockly app, and go on from where you finished last session.  **E Expand:** About 10mins ‘Tech Talk’, Ask students what the word ‘**sequence’** means – share what they know – give them the example of cleaning your teeth – who can list all the steps involved in cleaning your teeth? Why is it important to do the steps **in the right order**? What would happen if you didn’t do them in the right order? Other examples could be; getting ready for school in the morning, how to make a sandwich etc.  Use one of the students’ iPads and Dash – do the next puzzle in front of the students – put one of the blocks in the wrong place (so program doesn’t work properly) – it gives them a hint with red exclamation. Show the students your code (on Smartboard with apple tv if you can) – see if anyone can find the error & suggest what is wrong with it / how to fix it. Explain that this is the process called **debugging**, and is something we do a lot when coding. It can be hard to find the errors, but you need to go through the steps slowly, and work together with your partner to find and fix the ‘**bug**’.  **C Create:** 25mins Set students off to continue working with their partner, to complete some more of the puzzles. Remind students to work together cooperatively, taking in turns, sharing ideas to solve the puzzles. When successful, tick the check box next to the activity, to show you have completed it. Teacher to rove around, see how the students are going, if they need any help. They might need help reading the instructions. I have found that students tend to ask the teacher for help as soon as they have a problem – remind them that part of ‘**debugging**’ is finding the error themselves (refrain from telling or showing them their errors). First bit of advice I usually give students is to go back and reread all the instructions again, and see if they have done everything it asks them to do.  **H Huddle:** 5mins Come back together as a group. Where did you get to on the Puzzle Tracker? Pair up with another group of 2 students; share in the group – did you do some debugging today – how did you find where the error was? Share your tips.  Review the success criteria with the students – did you achieve them? If not, why not? |
| **Session Three:** |
| **Learning Intentions:** *I can work cooperatively with a partner to solve Dash coding puzzles. I can explain what events and loops are, and give examples of events.*  **Success Criteria:** *I took turns with my partner, made suggestions and we worked together cooperatively. I can explain and list the events we used on some of the challenges. I can explain how loops work.*  Use the box – Dash & Dot Challenge cards – the green set (B) – use cards; 1.1, 1.2, 1.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.3. Set them up around the room as stations. Check what they need – some need the bulldozer, one needs Dot, some need plastic cups, rulers, small toys / shells, masking tape (set the shapes with tape on the carpet at the start of the session) – all these things should be in the big plastic tub.  There will be 9 stations, and only 6 pairs of students. When they complete one challenge, they can go and try another one. The activities focus on; sequences, loops and events.  **I Inspire:** 2-5mins Teacher directed, a quick intro: show students the layout of the challenges around the room. Select one of the cards (1.2 would be a good one) – Show students the back of the card, read the instructions to them. Also show them, that for these challenges, students need to click in the top L hand corner when in Blockly, and click on Create New, to create sequences to solve them (not be in the Puzzles section).  **T Try:** 3-5mins Students work with a partner, they should be able to turn Bluetooth on, find and open the Blockly app, connect Dash to the iPad. Students can work to find a solution to the challenge.  **E Expand:** About 10mins Get each pair to quickly run their sequence, and see if it is successful. ‘Tech Talk’, Let students know that some of the challenge cards today use the terms ‘**events**’ and **‘loops’** – and at the end of the Create time, you will ask them if they know what these terms mean, and which challenges used them.  **C Create:** 25mins Set students off to attempt some of the Challenge card stations around the room. Encourage them to read the back of the card carefully – as it has lots of hints on there. Remind students to work together cooperatively, taking in turns, sharing ideas to solve the challenges. When successful, they can move on to another free station. Teacher to rove around, see how the students are going, if they need any help. When students are doing one of the activities that use loops or events, point it out to them, and see if they can explain what the terms mean.  **H Huddle:** 5mins Come back together as a group. Which challenges used loops and events? Can you define what these words mean? What were some of the ‘events’ that you used eg. hand clap, speaking. Overall, how did you enjoy your 3 weeks using Dash and Dot? Any suggestions for improving it for the next group? Did you like the Challenge cards or the Puzzles in Blockly more? |