Switch Progression
Level Descriptors for switches

🔴 Useful advice for working with switch users

Whatever technology we choose to use with our learners, we need to ensure that our students are comfortable and ready to learn. Positioning equipment can be scary for some. Take some time to talk to the learner to build interest in the up-coming activity. Take your cues from the learner, for example if they push the monitor away, try using the interactive whiteboard as your display. If they push the switch away, offer it only when the learner needs to press it, then remove it so the learner can focus on the effects they have created on the computer.

Where possible always try to use use switch caps on your switches. Switch caps allow you to add a printed image or photograph to the top of the switch which will help the learner make the connection between the switch and the reward they get for pressing it. All of the switch activities on this web site come with a set of ready to print images to use with your switch caps. Simply click the 'info' icon alongside your chosen program.

Think carefully about the verbal prompts you will use. The most common prompt that people use is "press the switch", however this places the focus of the activity onto the action of the switch not the reward the learner is pressing the switch to receive. Keep the focus of the activity on the reward. Use prompts like; "more music", "more rock-ets", or simply "more". This will help the learner make the association between the switch and the reward generated by pressing it.

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Make sure that everything works before starting the activity with the student. We are asking our learners to develop their understanding of what happens when they press the switch. In that context, if the switch does nothing, we're losing that learning experience.

Connect your switch to the computer and test that it works before handing over control to the student. In my teaching practise, I used this as a quick way to model the activity for the student and cue them that the activity was about to start. Our programs and activities follow the recognised standard of <space> for switch 1 and <enter> for switch 2.

Motivation is key to success when working with learners at this level. Know what interests your learners. What do they like to look at and listen to? What TV programs of films do they watch at home? For our learners with the most complex challenges, this information can be critical when trying to engage them and elicit positive responses. For others, offering activities aligned to their interests will motivate them and help them stay focussed on the task ahead. That said, our switch activities are not 'switch games' to play, there are other web sites for those.

Our activities have been carefully designed around popular themes to help your learners make progress with their understanding that using a switch will help them make meaningful choices and extend their influence and control over the immediate environment.

🔴 1 EXPERIENTIAL - Looking, Listening and Responding

At this stage, we are using technology to provide our students with stimulating experiences designed to help awaken their senses and to model what may be expected of them when they move to controlling the activity itself. The Switch Progression Road Map breaks this down into nine sub-levels. The first four describe a student 'encountering' experiences generated by the computer. There is no expectation that the student will take control of the activity at this level.

- *Student shows simple reflex responses to ICT generated experiences for example, startling at loud noises.*
- *Student encounters ICT generated experiences passively, showing little or no interest.*
- *Student attends briefly to sounds, or on-screen movement patterns.*
- *Student makes intermittent responses to sounds, or on-screen movement patterns.*

The next descriptors describe a student who is engaging, responding and taking some pleasure in the experiences being generated on the computer.

- *Student shows interest or pleasure in sounds, images or movement patterns, looking more intently and for longer periods.*
- *Student briefly tracks objects moving across the screen in the horizontal or vertical plane.*
- *Student shows consistent interest in the ICT generated experiences, reacting and showing positive responses to familiar images, sounds and activities.*

The final three descriptors describe the process of modelling the activity for the learner and increasing the opportunities for the learner to be an active part of the process.

- *Student tolerates and participates in the shared exploration of the switch and its method of activation.*
- *Student reaches out toward the switch when it is offered.*
- *Student independently explores the switch and its method of activation.*

When working at this level we use the computer to provide interesting and stimulating experiences for our learners to look at, listen to. We then look for positive responses. We have a switch connected to the computer, even though there is no expectation that the learner will use it independently. We model how to use the program utilising appropriate prompts and we provide opportunities for the learner to take part by offering the switch and using hand-over-hand support.

Our aim is to identify those experiences which elicit positive responses and use those to motivate and encourage the learner to look, listen and take part in the activity. At this stage we have lots of choices. We can use computer programs such as those on this web site and others, favourite videos from Youtube, switch adapted toys, lighting equipment and other devices. Use whatever you think will elicit those important responses.
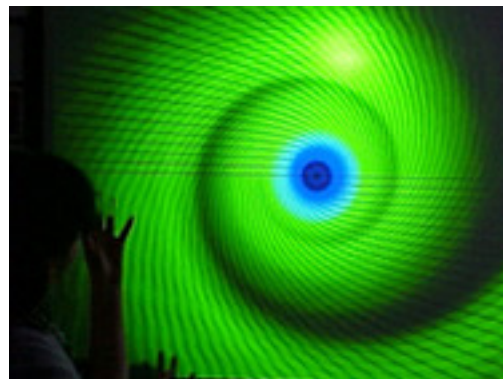
When we move to working directly with switches, our aim is to develop and reinforce the learner's understanding of cause and effect. We can do this by offering activities that use switches in different ways which model how they will later be used to make simple choices. We should work towards our learner becoming more independent in their switch use and encourage them to express their preference of activities.

Many schools use 'choosing' cards, PECS cards or 'talk' pages which visually represent the choices available to the learner. Choosing cards are available from the teaching 'info' file that accompanies each program or you can download the whole collection from the RESOURCES page. These cards can then be printed, laminated and used to create computer time choosing and other classroom activities.

The next three switch levels require very similar skills and where possible you should allow your learner to experience and practice them all in a range of different contexts.

🔴 2 PRESS AND HOLD - Keeping the switch held down to cause an effect

This stage requires the learner to press and then hold the switch down in order to initiate the reward. The reward will play only while the switch is being held down. When the learner releases the switch, the reward will cease.

We see this type of activation mostly with switch toys. For example, the learner presses the switch and a toy elephant will walk across the table. The elephant will continue to walk as long as the switch is being held down. There are few applications on the computer that use this method. Pressing a switch in this way can be very difficult to achieve for learners who may have movement difficulties or lack the muscle tone to maintain enough pressure to keep the switch down. For these learners, it's better to choose one of the other activation methods described below.

Press and hold is by far the easiest activation method for the student to understand. While they are in contact with the switch, the activity continues to play.

The Switch Progression Road Map descriptors focus on the amount of support the learner needs to master this level.

- *Student will press and hold a switch to achieve a desired effect with physical prompting (hand-over-hand).*
- *Student will press and hold a switch to achieve a desired effect with minimal physical prompting.*
- *Student will press and hold a switch to achieve a desired effect.*

As always when working with learners, we need to encourage them to be as independent as possible.

🔴 3 PRESS AND LET GO - Press and release a switch to cause an effect

This level requires the learner to press and release a switch in order to initiate a reward. The reward will play for a short time before stopping. The learner must press the switch again to restart the reward.

Some learners may have difficulty removing their hand from the switch. For these learners, you can mount the switch on an angle as shown in the photograph and let gravity do its work. For others, you might try encouraging the learner to put their hands on their knees after pressing the switch, however do remember that the learner pressed the switch to enjoy the reward. If they miss the reward, they will quickly lose interest in the activity.

Almost all switch software works with the 'press and let go' setting including many free activities available on the internet. Being able to press and release a switch should be seen as a key skill. We should provide the learner with a broad selection of opportunities to practice it.

Again, the Switch Progression Road Map descriptors focus on the level of support the learner requires.

- *Student will press and release a switch to achieve a desired effect with physical prompting (hand-over-hand).*
- *Student will press and release a switch to achieve a desired effect with minimal physical prompting.*
- *Student will press and release a switch to achieve a desired effect.*

🔴 4 PRESS IT AGAIN - Press a switch more than once to complete a sequence

Press it again activities require the learner to press a switch a number of times to complete a sequence. For many years, this has been interpreted in practice as 'switch building'. For example, the learner presses the switch and after each press, a new part of a picture is displayed on the screen.

Here's an example.

<press> A black square in the centre of the screen.
<press> Larger black square in the centre of the screen.
<press> Even larger black square in the centre of the screen.
<press> The squares animate to music.

This was never the intention when this stage was first devised back in the late 1990s.

The key skill at this stage is not that the learner can press a switch repeatedly, rather that the learner 'notices' that something has changed on the screen when the switch was pressed. We help the learner to notice these changes by pointing them out. As you can imagine, it's a little difficult to talk about squares appearing on the screen. It gets worse when you replace the patterns with objects. Imagine the learner pressed the switch for the first time and a cow's head appears on the screen. The second press, the cow gets a body, and so on. How many of our learners can identify pictures from parts of pictures? If the learner doesn't understand the activity they will simply revert to what they know and that is pressing the switch. This usually results in the learner developing switch 'tapping' behavior as they continually press the switch over and over in an attempt to get the reward to start.

It's much better practice to use scenes or sequences for press it again activities. For example the first press might show a photograph of the school bus and your comment may be, "Look, the school bus. I wonder where it's going?' The learner presses again to see an image of the seaside. Your comment may be, "It's the seaside." As you can see the activity tells a story or describes a sequence. Be careful with this stage. Remember, the number of times the switch is pressed isn't the measure for success at this stage. It's that the learner notices the changes.

The Switch Progression Road Map descriptors describe it like this.

- ***Student can activate a switch a number of times to keep an activity playing.***
- ***Student can activate a switch a number of times to complete a simple sequence, noticing changes after each press.***

🔴 **5   ON AND OFF** - Press a switch to start and stop an activity

At this stage, the switch is used to turn things on or off. Normally described as 'latching', these are activities where the switch is pressed once to start something, for example some music playing. A second press on the switch will stop the music playing. This fundamentally changes everything the student has learned so far about what the switch does and some creativity is required to help them understand this new function.

Perhaps the best way to introduce this stage is to use music. When the switch is pressed, the learner's favourite music begins to play. After a short while (40 seconds or so), go over and press the student's switch to turn off the music with an appropriate comment such as, "That's awful, turn it off." The learner will of course turn it back on. Repeat lots of times. You can always swap the activity and have dreadful music play when the switch is first pressed. The learner should then be encouraged to press the switch to turn it off.

Activities with switch toys and devices in the multi-sensory room will also help the student develop and practise this important skill. Very little software has been developed to support this stage of learning.

The Switch Progression Road Map provides additional activity ideas.

- ***Student can activate a switch to start and stop an activity.***

This activity can also be used with two switches where one switch can start the music and the other stops the music.

🔴 6 THIS OR THAT - Differentiate between the actions of two switches

This level introduces a second switch as a means of making a simple choice between this switch and the effect it creates or that switch and the effect it creates. At this stage we offer quite different effects for each switch to help the learner differentiate between them for example two different pop songs. When the learner become more adept at choosing from the two switches, we can add in preferred and non-preferred choices. Be careful not to re-

The Switch Progression Road Map describes activities at this level as 'two switch play' and that is exactly what they are. An opportunity to experience using two switches. There will be learners who are unable to use two switches due to physical limitations, for these learners, you should move them along a single switch path with 'pop up' and 'positional' activities.

- *Student can differentiate between the actions of two switches each producing different effects when activated*

Don't forget to use switch caps to help your student differentiate between the switches.

🔴 7 POP UP - Press a switch in response to an on-screen prompt

Pop up activities are designed for single switch users and help learners develop the skills they will need to have in order to use switch scanning to make meaningful choices. An object will appear on the screen usually

Pop up activities can be challenging for some learners, especially those with physical difficulties as the student needs to press the switch within a specific time period. Building excitement and anticipation of the coming reward can add to this and the learner finds it very difficult to press the switch within the allotted time. If your learner has these difficulties, use the settings in the program to force the prompt to stay on the screen until the learner has pressed the switch.

- *Student can press the switch in response to an on-screen prompt.*

This stage works best when used alongside 'positional' activities described below

🔴 8 POSITIONAL - Press a switch when an object is in a specific place

Positional activities require the learner to activate the switch when an object is in the 'right' place on the screen. These activities present similar difficulties for learners with physical difficulties as described in the pop up activities. Again, if the learner is having problems pressing the switch within the allotted time frame, use the settings to make the object halt and wait for the learner to press the switch.

In a typical positional activity, an object will move across the screen, in this example a dragonfly. When the dragonfly is directly above the plant, the student presses the switch and the plant eats the dragonfly. In the example shown here, the student also receives an additional visual and auditory cue to press the switch. Changes in the settings can make the dragonfly wait until the switch is pressed.

- *Student can track an object as it moves across the screen, pressing a switch when the object is in a target area.*

This models the process of tracking a scan box as it moves across the screen and pressing the switch when the object the learner wants to choose is highlighted.

🔴 9 MOVE AND CHOOSE - Use two switches, one to move, the other to choose

Move and choose activities are activities for users of two switches which help them develop the skills they will need to use their switches to make choices using two switch scanning systems.

Each of the switches has a different function. The first switch is the move switch. Pressing this switch moves between the available choices. In some activities this is an image that will change with each switch press. In our example, if we don't want to choose the cat, we can press the move switch to change it something else, perhaps a dog or rabbit. In other activities the available choices are presented in a grid row. Pressing the move switch moves a red box from left to right along the grid highlighting each of the choices in turn.

If the learner decides to choose one of the options, they press the choose switch. This accurately models the two switch scanning process used on all switch adapted communication and access systems currently on the market.

The Switch Progression Road Map also describes 'build up' activities which are simpler versions of the move and choose stage activities. In build up activities, one switch builds something with each press for example a tower of blocks. Pressing the move switch adds another block. Pressing the choose switch applies an action to the tower of blocks, most often, knocking them down. The learner is able to knock the tower down at any time but receives the biggest reward for knocking down the tallest towers.

Student can use two switches to complete 'build up' or simple 'move and choose' activities.

🔴 10 ERRORLESS CHOOSING - Scan and choose objects with one or two switches

Errorless choosing activities give our switch users the opportunity to practice and build their one or two switch scanning skills with fun activities where, whatever the learner chooses, they receive a reward.
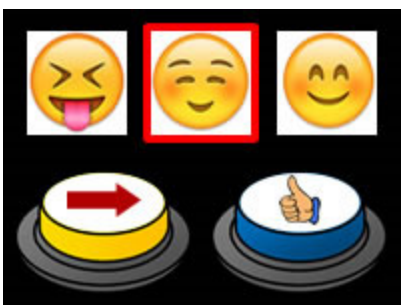
Choices are presented as rows in a grid. A red scan box will move from left to right over each choice either automatically under computer control (single switch) or with each press of the move switch (two switch). Pressing the choose switch (single switch users only have a choose switch) will select the highlighted choice and play the associated reward. If you're working with a single switch user, you may want to set the speed of the automatic scanning and highlighting to a speed appropriate to the needs of your learner. You can do this in the program settings.

It's good practice to never to use less than three choices in your errorless choosing activities. Also try and resist the urge to ask the learner to 'find' a specific object from those available.

Questions such as this ramp up the level of difficulty and add increased cognitive load. There will be plenty of time for requests to find specific objects when the learner has further developed their skill.

Student can choose one object from a row of three or more objects using scanning.

Once your learner becomes more adept at scanning with their switch or switches, they can begin to use that skill increasingly in their lessons, for example the program 'Happy Shapes Choosing' could be used as part of a lesson exploring 2D shapes.

Mainstream commercial software such as Clicker 7 provides the facility for you make grids of words or sentences that can be scanned with one or two switches. Using the switch settings in IOS, all iPad apps can be made accessible to 1 or 2 switches.
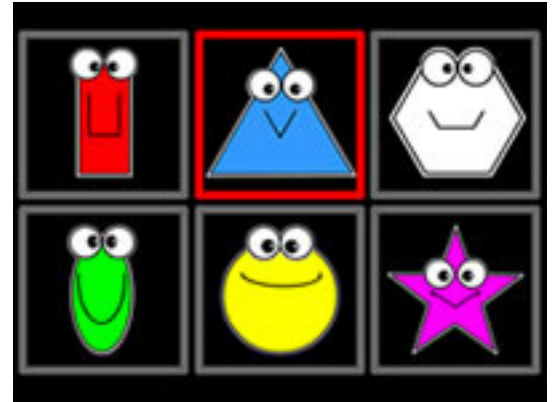
When our learners are able to demonstrate a good understanding of what is required to make choices by scanning, we can begin to ask 'find the' questions or use software which requires the student to choose specific objects from those available. Be aware of the additional cognitive load and be led by the learner.