**IPC Brainwave Unit - The Art of Learning**

**Learning Goals**

3.01 Know about some of the recent evidence and research into the brain and learning

3.02 Know about some of the different areas of the brain and their function

3.03 Understand the different ways that they can learn

3.04 Understand how they can improve their learning and their attitudes to learning

3.05 Understand the importance of cooperation and global awareness in their learning

[Use this Google Slide alongside planning](https://docs.google.com/presentation/d/1xWr36HUPlOdQjXTMuxZapj5vvt2p8DwHxAtLgH_ZL8A/edit?usp=sharing)

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| **Lesson 4** | **Warm-up** | **Main Teaching** | **Activity / Assessment** | **Plenary** | **Resources** |
| **Monday**  LO: To know about different areas of the brain and their function | Show students the BrainPop video about neurons:  <https://www.brainpop.com/health/bodysystems/neurons/>  Point out that the palm of their hand represents the main body of a neuron, their fingers represent dendrites and their arm represents the axon. Research neurons, axons and dendrites | Explain that neurons do two things. First, they get switched when stimulated by incoming information. Once stimulated, they try to make connections with other neurons. This is how we learn. The more we practise, the more likely we are to improve - as our neural connections will strengthen and grow. | Students draw and label a diagram of a neuron in their exercise book.  As an extension, they should write down what they know about what neurons do. | Review what children have learnt about neurons. Check their understanding about key vocabulary: neurons, axons and dendrites. | BrainPOP |

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| **Lesson 5** | **Warm-up** | **Main Teaching** | **Activity / Assessment** | **Plenary** | **Resources** |
| **Tuesday**  LO: Identify different types of intelligences | Discuss the fact that there are multiple types of intelligence.  Someone who is good at sport for example, has a particular set of neurons that connect particularly well. Someone good at maths has another set of neurons that connect particularly well. Etc.  Tell the children that a scientist called Howard Gardner believes there are eight different ways that human beings can be considered intelligent:   * Word smart * Number smart * Music smart * Movement smart * People smart * Self-smart * Organised smart * Picture smart   Discuss with the children the two or three intelligences that are usually used when we think of someone as ‘intelligent’. Point out that inside the brain there is no difference between someone who is number smart and someone who is movement smart. It is just a different set of neurons. Emphasise that brain research has shown that most of us are intelligent, but in different ways.  Show this video on the topic:  <https://youtu.be/jVQitvk1Xtk> | After watching the video, explain that students will create a table in their exercise books, which links different famous people with the type of intelligence that has made them famous. | **TASK 1:** Write a list of five famous people and put them into categories for why they are famous, e.g. musical, sports, science, etc.  **TASK 2:** Using the groups of famous people from the beginning of the lesson, decide which of the following intelligences are most applicable to each group, justifying your decisions:   * Word smart * Number smart * Music smart * Movement smart * People smart * Self-smart * Organised smart * Picture smart   Put this information together in a **famous people table**, which can be done in your exercise books. | Invite the children to share their work with the rest of the class. Elicit different strategies from the children about what we can do to develop different intelligences.  Emphasise the fact that:   * Everyone is genuinely intelligent - but in different ways * We can develop the intelligences that are not so strong | Video  Exercise books |

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| **Lesson 6** | **Warm-up** | **Main Teaching** | **Activity / Assessment** | **Plenary** | **Resources** |
| **Wednesday**  LO: Understand how I can improve my learning and attitude to learning | Set up a circle time session. Following the Google Slide, ask the students key questions, to discuss:   * Do you think your emotions can affect the way you learn? * Can you think of a time when you didn’t feel ready to learn? * What emotions were you feeling at the time? * What was the obstacle to your learning?   Then show the students the video from the University of Cambridge, which explains how emotions impact learning:  <https://youtu.be/EW7FBndUPe8>  If possible, let the children draw some conclusions from the responses that everyone has made. | Explain to the children that there is a part of the brain called the amygdala. The amygdala is the junction box of the brain. All input goes to the amygdala where it is then sent to other parts of the brain. When we are frightened or stressed, the neurons in the amygdala immediately respond by putting us in a ‘fight or flight’ mode (it’s the body’s survival instinct that was so important to us when we were hunters and gatherers, living and surviving in the wild).  When our ‘flight or fight’ response is triggered:   * Blood rushes from the extremities of the body to protect the main organs * Our hearts beat faster to get more blood and oxygen to our muscles * We start sweating so that our bodies will stay cool * Our brain goes into an ‘automatic’ response mode - the cortex (responsible for thinking) almost shuts down, making it very difficult to think rationally | Give the students the sentence starters below and ask them to record their answers on a piece of card. Place the cards into two separate bowls in the middle of the circle (one for each sentence) and take it in turns to pick a card and read it out loud:   * I learn well when I feel… (responses may include: supported, excited, interested, etc.) * I learn badly when I feel… (responses may include: tired, hungry, cold, angry, worried, etc.)   Then challenge the students to write a list of things that could be done, to create a more positive and supportive learning environment. They should try and come up with at least three suggestions, exploring how these might be introduced and their positive benefits. | Invite groups to share their ideas and then decide as a whole class which ideas you could put into practice as soon as possible. Example might include:   * Award certificates for effort and improvement * Hold regular learning celebrations * Play relaxing music in the morning or after busy break times * Set up a regular time for meditation exercises * Introduce plants into the classroom * Remove unnecessary clutter |  |

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| **Lesson 7** | **Warm-up** | **Main Teaching** | **Activity / Assessment** | **Plenary** | **Resources** |
| **Thursday**  LO: Explain what it means to have a growth mindset and how this can be developed | Show Growth Mindset video.  <https://www.youtube.com/watch?v=-_oqghnxBmY> | * Write the terms ‘growth mindset’ and ‘fixed mindset’ on the whiteboard. Based on the video they have just watched, review the students’ ideas for what each term means. Explain that everyone is different - people have different skills and strengths, but if we apply ourselves and challenge ourselves, we can improve. This is the central idea of a growth mindset. * Elicit from the students that fixed mindset takes a more rigid view of learning, that intelligence is fixed at birth and we are either natural experts at something or we are not. Fixed mindset individuals are more likely to stick to things they are good at. | **TASK 1-** Answer these questions about the video you have just watched:     1. How do people become more intelligent? How does the diagram of the neurons “At birth vs. at age 6” demonstrate this? 2. How does the second diagram of the nerves of the animal living in a cage vs. an animal living with other animals and toys demonstrate this? 3. How are our brains like muscles? Explain. 4. When do our brains grow the most?   **TASK 2 -** What is neuroplasticity? Explain.  **TASK 3 -** **JOURNAL ENTRY:** As part of our ‘Growth Mindset’ class, write a journal entry about a success story. Think about a time when you were successful at something and explain your journey to success.  Did you just wake up and be a brilliant skier? A pro tennis player? An amazing artist? A super reader?  What did the journey look like? How did you get there? | * Discuss the fact that many tasks in life take time and effort to master - symbolised in this case by the construction of an origami penguin. | Paper and instructions for how to build an origami penguin |

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| **Lesson** | **Warm-up** | **Main Teaching** | **Activity / Assessment** | **Plenary** | **Resources** |
| **Friday**  LO: Develop an understanding about what it means to be internationally-minded | Share with the students the school’s definition of international mindedness. Elicit from the children why they might think international-mindedness is important. | The following websites are ideal sources for world news:  <https://www.pitara.com/>  <http://www.ourlittleearth.com/>  <https://central.espresso.co.uk/espresso/modules/news/2.html?source=espresso-home-mixedcore-content>  Look together and talk briefly about the stories the children have identified. Use a world map to locate and highlight the areas of the world that are being talked about. Are there any patterns to be found in the areas that are featuring in the news? Are there particular hotspots that can be identified?  Talk about the countries featured – and the children’s existing knowledge of these areas. Perhaps they have visited them on holiday, or might have family/friends that live there. Do any of the events that have been identified have an impact on Brazil? Prompt the children to think about why, as learners and global citizens, having knowledge of other countries and communities might be important.  Link this discussion to international learning in the IPC and this idea of ‘international mindedness’ – to develop global awareness and gain an increasing sense of ourselves, our community and the world around us.  Ask the children to consider the following: as global citizens do we have a responsibility to get involved and make a difference? Explore the children’s responses. They may have already been involved in fund-raising and other projects to help raise awareness of local and international organisations. Encourage the children to share their experiences and how it felt to be involved and to make a difference.  Show the video from the Kid President. Discuss the children’s thoughts and they think can be done to make the world a better place. | In students’ exercise books:  **Task 1:** Explain in your own words what International Mindedness means?  **Task 2.** Find a news article on a critical issue from somewhere around the world. Summarise it in your own words.  **Task 3:** Make a video to go in your Google drive digital portfolio folder, to describe what international-mindedness means. | Invite children to share their work with the rest of the class. Clarify any misconceptions or further ideas. | News websites |

For additional activities, use Chromebooks or the computer lab and ask students to complete the [Brainwave activities available on our Classroom Flipped website](http://classroomflipped.com/topic_class3_topic1.php?title=Brainwaves&class=Class+3).