

Hooked on Thinking Differentiated Curriculum Model Planner

Concept:	Context:	Values:	Key Competencies:	Key Understanding:	Driving Question:	Subsidiary Questions:
Movement	Forces Dance	Excellence Innovation Diversity Equity Community and Participation Ecological Sustainability Integrity Respect	Thinking Managing self Participating and contributing Relating to others Making meaning from language, symbols and text	Movement – is a change in position with respect to time. Objects can be described as - Stationary (at rest) - Moving Motion is caused by the application of a force [Motion can be: moving at a constant speed. Moving at increasing speed (accelerating) Moving at decreasing speed (decelerating) - in a given direction forwards, backwards, upwards, downwards]	Changing position: What moves? How do start and how do you stop?	1. DEFINE movement 2. EXPLAIN the cause of movement and consequence of movement. 3. CREATE an artwork (dance) that communicates “Movement”
Curriculum Learning Area:		Achievement Objectives:	Curriculum Level:	Learning Intentions		
<p>Select the learning area and essence statement that best match the concept and context for your students.</p> <p>The Arts</p> <p>In the arts, students explore, refine, and communicate ideas as they connect</p>		<p>Select the achievement objectives that best match the abilities of your students.</p> <p>STRANDS AND ACHIEVEMENT OBJECTIVES</p> <p>- Level 4</p> <p>DANCE</p> <p>Students will:</p>		<p>Schools will have their own criteria for developing learning intentions. http://www.slideshare.net/Artichoke/solo-taxonomy-learning-intentions-and-hot-maps Use your LI's to write your WALTs.</p> <p>We are learning to</p> <p>DESCRIBE dance elements; Space, travelling, levels, beat and unison</p> <p>EXPLAIN how dance elements; Space, travelling, levels, beat and unison are</p>		

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

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<p>thinking, imagination, senses, and feelings to create works and respond to the works of others.</p>	<p><i>UC: UNDERSTANDING DANCE IN CONTEXT</i></p> <ul style="list-style-type: none"> - Explore and describe how dance is used for different purposes in a variety of cultures and contexts. <p><i>PK: DEVELOPING PRACTICAL KNOWLEDGE</i></p> <ul style="list-style-type: none"> - Apply the dance elements to extend personal movement skills and vocabularies and to explore the vocabularies of others. <p><i>DI: DEVELOPING IDEAS</i></p> <ul style="list-style-type: none"> - Combine and contrast the dance elements to express images, ideas, and feelings in dance, using a variety of choreographic processes. <p><i>CI: COMMUNICATING AND INTERPRETING</i></p> <ul style="list-style-type: none"> - Prepare and present dance, with an awareness of performance context. - Describe and record how the purpose of selected dances is expressed through the movement. 	<p>used for different purposes.</p> <p>APPLY dance elements; Space, travelling, levels, beat and unison to explore personal movement skills.</p> <p>COMBINE dance elements; Space, travelling, levels, beat and unison to express the idea of an unbalanced force causing a change in position with respect to time.</p> <p>COMPARE and CONTRAST dance elements; Space, travelling, levels, beat and unison to express the idea of an unbalanced force causing a change in position with respect to time.</p> <p>PREPARE a dance to communicate the physics idea of an unbalanced force causing a change in position with respect to time.</p> <p>PRESENT a dance to communicate the physics idea of an unbalanced force causing a change in position with respect to time.</p> <p>REFLECT (Describe and record) how the purpose of the dance (to communicate the idea of an unbalanced force creating movement) is expressed through the movement in the dance.</p>
<p>Science</p> <p>In science, students explore how both the natural</p>	<p><i>Science</i></p> <p><i>Physical World</i></p>	<p>Define force</p> <p>Define weight force (force due to gravitational pulls of earth Newtons)</p>

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<p>physical world and science itself work so that they can participate as critical, informed, and responsible citizens in a society in which science plays a significant role.</p>	<p><i>Level Four</i></p> <p><i>Physical inquiry and physics concepts</i></p> <p><i>- Explore, describe, and represent patterns and trends for everyday examples of physical phenomena, such as movement, forces, electricity and magnetism, light, sound, waves, and heat. For example, identify and describe the effect of forces (contact and non-contact) on the motion of objects; identify and describe everyday examples of sources of energy, forms of energy, and energy transformations.</i></p>	<p>Define mass (amount of stuff in something kg)</p> <p>Define motion</p> <p>Describe a force</p> <p>Classify forces (push and pull, contact and non contact forces, magnetic, elastic, weight due to gravity, action, reaction, balanced, unbalanced etc)</p> <p>Compare and contrast forces</p> <p>Explain the effect of an unbalanced force on the motion of objects (change in motion, change in shape and change in direction)</p> <p>Create a structure to balance (support) a weight force</p> <p>Generalise about balanced and unbalanced forces</p>
<p>Learning Experiences: <i>Learning experiences that best meet the learning intentions and achievement objectives that match your students' abilities.</i></p>		
<p>  Bringing in ideas: (Identify/ Label/ List/ Define/ Describe/ Retell/ Recall/ Recite) <small>Multistructural</small> </p> <p>DESCRIBE Dance Element activities:</p> <p>Introduce and explain dance elements – Space, travelling, levels, beat and unison</p>	<p>  Linking ideas: (Sequence/ Classify/ Compare Contrast/ Cause Effect/ Analysis Part whole/ Explain/ Analogy/Question) </p> <p>COMBINE Dance elements to express an idea:</p> <p>COMPARE and CONTRAST Dance elements to express an idea</p> <p><i>Individually children to show different movements for</i></p>	<p>  Putting linked ideas in another context: (Predict/ Hypothesise/ Generalise/Imagine/ Reflect/ Evaluate/ Create) </p> <p>PREPARE a dance to communicate the physics idea of an unbalanced force causing a change in position with respect to time.</p>

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<p><i>Square space activity using space, travelling and levels - children to find a square on the floor and number the corners of the square. Teacher calls out numbers, children to jump on those numbers. Speed up and mix up the numbers. Repeat with a square above their heads and call out all 8 numbers.</i></p> <p><i>Move their space around the room with out disturbing any one else's space. Teacher calls out freeze. Children start to get faster and faster and avoid each others space.</i></p> <p><i>Teach children an 8 count square dance. Children to add 4 of their won counts. Once they have memorised this they can choose a partner and teach each other the their dance and mix both together.</i></p> <p><i>Discussion about the previous travelling activity relating it to the elements explain space, levels and travelling definitions</i></p> <p>Evaluation: <i>Discuss in pairs what they enjoyed in the lesson and what they learnt. Explain to them what they will be working on next time.</i></p> <hr/> <p>DESCRIBE and EXPLAIN DANCE elements – Pathways, non locomotor and locomotor movements</p>	<p><i>different contact and non-contact forces acting on objects.</i></p> <p><i>Children to individually choose 3 force movements that they like and put in order. Add a variety of speed to the movements.</i></p> <p><i>In pairs children to choose a moving object and choose 4 moves that the particular object would have. Put the movements to 2 counts each.</i></p> <p><i>Practise the movements in a sequence</i></p> <p><i>Change each movement to 4 counts each and add travelling.</i></p> <p><i>Add a type of speed to one of their movements changing the beats if needed.</i></p> <p><i>Add a start and finishing shape to sequence.</i></p> <p><i>Perform to the rest of the class with music.</i></p> <p><i>Children to respond to other groups sequences with positive comments and comments that can help groups to improve.</i></p> <p>Evaluation <i>Discuss as a class what other types of power you could show in a dance and how does speed effect the dance and how it may look.</i></p>	<p>Choreographing, planning and practising a dance:</p> <p>Explain to the children the assessment activity and what is expected of them.</p> <p>Children to record their dance sequence on a planning sheet and they will also have a list of dance elements that they will need to include in their dance.</p> <p>Children continue to choreograph their sequence and continue practising it.</p> <p>Groups to show their sequence to another group and the group give them feed back on what to improve on next time.</p> <p>Evaluation: Ask the children what they worked well on for the lesson and what they can work on for their next lesson. Let the children know that they are to look out for more dance moves to add to their sequence and to remind them that they will be performing it next lesson.</p> <hr/> <p>PRESENT a dance to communicate the physics idea of an unbalanced force causing a change in position with respect to time.</p>
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<p>Element activities: Introduce and explain the new dance elements – Direction, pathways, focus and locomotor and non-locomotor.</p> <p>In partners children to choose 2 locomotor out of the hat and 2 non locomotor out of the hat create the movements for these words. To put these movements into a sequence using unison.</p> <ul style="list-style-type: none"> - Introduce the music. Children to put their sequence to a beat. - Ask the children to add in a pathway to one of their locomotor movements. - Ask the children to change levels in their sequence. - Children to perform their sequence altogether with the rest of the class to the music provided. <p>Evaluation: Discuss as a class group what they enjoyed and what they learnt and how can they improve their sequences for next time? Explain to them what they will be working on next time</p> <hr/> <p>DESCRIBE AND EXPLAIN dance elements – Shape, direction and dance sequence</p> <p>Introduce and explain new element activities:</p> <p>In groups of 3, children to make a starting shape</p>		<p>Choreographing and planning a group dance, performing in front of an audience.</p> <p>Recap on the expectations of their assessment group sequence. Point out the time limit, type of beat for their dance, including all the dance elements needed in their dance and group co-operation.</p> <p>Children to continue choreographing their group dance ready for their performance. Give children 30 mins to complete. Through out the lesson tell the groups to discuss if they have covered all of the elements and if they have not to add some more to their sequence. If children have all the elements they need to think about where their sequence needs changing or adding and work on this.</p> <p>Teacher to time the children and give them suggestions and advise if needed</p> <p>Video each performance.</p> <p>Perform to the rest of the class. The audience are watching for good movements and combination of dance elements and well as improvements that the groups could work on.</p> <p>Evaluation:</p>
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<p>for a sequence. Give each group a locomotor movements and they are to use this as their first move for their dance sequence. Moving from their starting shape. Add on a non locomotive movements and a locomotive movement. Tell children to add different direction to one of their locomotive movements. Make a finishing shape for their sequence. Half of the class to perform at the same time and swap over.</p> <p>Evaluation: Children to respond to other groups sequences with positive comments and comments that can help groups to improve. Explain to them what they will be working on next time</p> <hr/> <p>Introduce and explain drama elements – Power, speed and flow</p> <p>Introduce element activities: Children need to pretend they are robots and to move one part of their body in a sharp manner, once they have done this add 2 more body movements and put in an order. Repeat the previous activities with smooth movements, forceful movements, delicate movements. Stand opposite a partner and challenge the</p>		<p>Children discuss with the class how they thought their dance performance went and what they could improve on for next time.</p> <hr/> <p>Performing in front of an audience, analysing dance Children to continue performing dances if they did not get to perform last lesson.</p> <p>Video each performance.</p> <p>Perform to the rest of the class. The audience are watching for good movements and combination of dance elements and well as improvements that the groups could work on. Children to watch their group assessment dances from the video footage and give feed back on the elements that were covered and constructive comments on how they could improve their dance for next time.</p> <p>As a group they need to assess themselves on the following: What elements did your group do well at? What elements does your group need to improve on?</p> <p>Teacher to check, sign and mark.</p> <p>Evaluation:</p>
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<p><i>partner with their moves. Then move parents to a group of four and challenge again. Then move class to 2 groups and challenge each others. Give the children a variety of non locomotive movements and locomotor movements in groups children to create their own group dance using a variety of power and speed.</i></p> <p>Evaluation</p> <p><i>Discuss as a class group what they enjoyed and what they learnt and how can they improve their sequences for next time? Explain to them what they will be working on next time</i></p>		<p>Ask the children what they enjoyed about dance and what they learnt and if it was worth doing? If you had the opportunity would you want to learn more about different types of dance?</p> <hr/> <p>REFLECT (Describe and record) how the purpose of the dance (to communicate the idea of an unbalanced force creating movement) is expressed through the movement in the dance.</p> <p>Analysing dance and self assessment</p> <p>Portfolio assessment sheet – Teacher to explain portfolio sheet and children to self assess on the following: Exploring dance, Choreographing dance, performing dance and interpreting dance.</p> <p>Children to also fill in self evaluation on portfolio sheet.</p> <p>Read the children’s self evaluation including the following: what element they have learnt, what they enjoyed and why, has their confidence improve and why, co-operation and contribution with their group and enjoyment of the dance lessons.</p> <p>Teacher will watch through group assessment</p>
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		dances after and assess the children on her professional judgement and to mark while children are in class.
<p>SCIENCE PHYSICAL WORLD</p> <p>I note that forces is very difficult to teach well – probably best done with heaps of simple experiments that observe and explore forces in action – to develop a strong sense of how forces work.</p> <p>Check out http://classroom.ic-schools.net/sci-units/force.htm for ideas on how to introduce this and build understanding</p> <hr/> <p>Essential Understanding: Forces are all around us Forces make things move – Nothing can begin to move unless a force starts it Push and pull, Weight is a force Contact and non contact forces Forces do things- change shape, change direction, change position, change speed of objects, change motion If something isn't changing its motion then the forces on it are exactly balanced</p>	<p>SCIENCE PHYSICAL WORLD</p> <p>Classify forces in a range of resources (sorting them into push, pull, balanced, unbalanced, magnetic, gravitational etc.)</p> <p>Cause and effect of force on an object (all experimental work will go in here- changes)</p>	<p>SCIENCE PHYSICAL WORLD</p> <p>Investigate and create a bridge structure to balance the weight force of an object</p> <p>Design an investigation /experiment to test which bridge has the most support force to balance the weight force of cars crossing (FAIR TESTING – choice of dependent and independent variables, repeating measurements for reliability etc)</p> <p>Create a short video or MS Photostory3 wma that can be used to teach the juniors that “forces are all around us” – use over large arrows to indicate forces in action</p> <p>Investigate forces at a local bridge – make a blog/ VoiceThread that identifies 5 different forces in action at the bridge – photos etc</p>

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Different sorts of forces- forces caused by gravity, air resistance, magnetic, elastic, frictional, simple pushes and pulls, lifting forces, muscular forces, electrical forces.

Forces have direction – work in any direction at all

Action and reaction forces – equal in size but opposite in direction

Weight is always a downwards pull force

Forces have different strengths

Balanced vs Unbalanced forces

Motion can be

Stationary

Moving at constant speed

Moving at increasing speed (accelerating)

Moving at decreasing speed (decelerating)

forwards, backwards, upwards, downwards

Note: Common misconceptions about Force

1. The only "natural" motion is for an object to be at rest.
2. If an object is at rest, no forces are acting on the object.
3. A rigid solid cannot be compressed or stretched.
4. Only animate objects can exert a force. Thus, if an object is at rest on a table, no forces are acting upon it.
5. Force is a property of an object. An

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<p>object has force and when it runs out of force it stops moving.</p> <p>6. The motion of an object is always in the direction of the net force applied to the object.</p> <p>7. Large objects exert a greater force than small objects.</p> <p>8. A force is needed to keep an object moving with a constant speed.</p> <p>9. Friction always hinders motion. Thus, you always want to eliminate friction.</p> <p>10. Frictional forces are due to irregularities in surfaces moving past each other.</p> <p>11. Rocket propulsion is due to exhaust gases pushing on something behind the rocket.</p> <p>12. Velocity is another word for speed. An object's speed and velocity are always the same.</p> <p>13. Acceleration is confused with speed.</p> <hr/> <p>Define force (define map) (change descriptor in the middle to different types of forces). Can use to do pre and post snapshot.</p> <p>1. Observe forces in everyday situations – For example: visit a school playground, local bridge, amusement park – eg describe forces acting and any motion occurring - motion on rollercoaster at different parts of the trip –</p>		
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<p>stationary accelerating, decelerating, constant speed – Draw forces acting on the bumper boat when it is stationary – moving forward – moving at constant speed - Forces in bumper car collision –</p> <ul style="list-style-type: none"> • Identify contact forces (push with hand or pull with rope) • Identify non contact forces (magnets, gravity, electrical forces) • Identify friction force • Identify weight force • Identify action and reaction forces • Identify situations where action and reaction forces are balanced and situations where they are not balanced and change in shape or motion occurs • Describe the action and reaction forces involved in everyday situations • List ten things a force can do • Identify and label action and reaction forces in a range of resources and situations (eg weight force (down towards center of earth), and support force) – could use large cardboard arrows and photograph the labelling. • Repeat with labelling action and reaction forces due to push forces and friction forces. 		
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<p>2. Experiment with forces – investigate using many hands on activities</p> <ul style="list-style-type: none"> • Direction of forces • Strength of forces (N newtons) • Balanced and unbalanced forces eg tug of war – when force is balanced there is no movement or the object is moving at constant velocity, when force is unbalanced there is movement - the object is speeding up or slowing down • Friction forces – a contact force (incl air resistance) – everyday examples of friction – ways of reducing friction – ways of increasing friction • Measuring forces using Force Meters. (1N force is approx force needed to lift an apple) <p>nb multiply by 10 to change mass in kg into weight force in Newtons</p> <ul style="list-style-type: none"> • Identify Motion when all forces acting are balanced <ul style="list-style-type: none"> Stationary (all forces acting on body are balanced) Moving at constant speed (all forces acting on body balanced) • Identify motion when forces are 		
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<p>unbalanced</p> <p>Moving at increasing speed (accelerating)</p> <p>Moving at decreasing speed (decelerating)</p> <p>forwards, backwards, upwards, downwards</p> <p>Distinguish Mass from Weight</p> <p>“If you turn into a ghost mass is what you will miss the most”</p> <p>Define mass (kg)- the amount of stuff in something</p> <p>A massive object has a lot of mass in it</p> <p>Measure in tonnes, kilograms, grams and milligrams</p> <p>You cannot push your finger through the table because the stuff in your finger bashes into the stuff in the table ... but if your finger had no mass it could go straight through.</p> <p>Define weight (Newtons)) – weight is the pull of the earth’s mass on your mass</p> <p>Wherever you are on Earth your weight is a downwards pull towards the middle of the earth</p>		
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<p>Measure in Newtons (N) – On earth each kilogram of mass has a weight of approx 10 Newtons</p> <p>Your mass is the same wherever you are Your weight can be different ... up high mountain your weight will be less because you are further away from the center of the earth</p> <p>Gravity A pull force Any two lumps of stuff in the universe are pulled towards one another – this pull force is called gravity The Earth has a big mass so its gravity is usually the biggest pull on your body.</p>		
<p>Thinking interventions that target bringing in ideas:</p>	<p>Thinking interventions that target linking ideas:</p>	<p>Thinking interventions that target putting linked ideas in another context:</p>
<p>ICT to enhance conditions for bringing in ideas:</p>	<p>ICT to enhance conditions for linking ideas:</p>	<p>ICT to enhance conditions for putting linked ideas in another context:</p>

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Assessment: Learning Area:		Assessment: Key Competency	
<i>Self - assessment rubric for an achievement objective.</i>		Self - assessment rubric for a key competency	
Extended abstract		Extended abstract	
Relational		Relational	
Multistructural		Multistructural	
Unistructural		Unistructural	
Prestructural		Prestructural	
ICT Resources:	Thinking Resources:	What if Questions:	Student-led Inquiry Scenario:
<i>These are suggested ICTs that will support the bringing in of ideas, the connecting of ideas, and putting ideas into another context.</i>	<i>These are suggested thinking frameworks based on a range of strategies.</i>	<i>Use these for class/group discussion or writing.</i>	

Refer: Ministry of Education. (2007). *The New Zealand Curriculum for English-medium teaching and learning in years 1–13* Wellington: Learning Media.

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