## Magnetic Moves – Stage 2

Term	1	1 2	2	3	4	Weeks	1	2	3	4	5	6	7	8	9	10	11
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Physical World Strand

Outcome	Lesson Sequence – Overview	Resources	Word Wall
<ul> <li>ST2-9PW-ST describes how contact and non- contact forces affect an object's motion</li> <li>discuss ideas about why objects move</li> <li>suggest how an object can move without direct contact</li> <li>list ideas about magnets and magnetic force</li> <li>ST2-1WS-S questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations</li> <li>understand the purpose and features of a science journal</li> <li>understand the purpose and features of a TWLH chart</li> <li>understand the purpose and</li> </ul>	Lesson 1 <u>Mystery Moves – Lesson focus p 1</u> • To capture students' interests and find out what they think about how forces can be exerted by one object on another through direct contact or from a distance <u>Students:</u> • observe an object moving without an obvious push or pull • list ideas about magnets and magnetic force <b>Students:</b> <b>Constant of the state of t</b>	<ul> <li>For the class</li> <li>class science journal</li> <li>TWLH chart</li> <li>word wall</li> <li>1 small table</li> <li>1 cloth to cover table</li> <li>1 large magnet</li> <li>1 large paperclip or magnetic object</li> </ul> For each student <ul> <li>science journal</li> <li>1 large magnet per pair of students</li> <li>1 large paperclip or magnetic object per pair of students</li> </ul>	attraction contact distance Earth force friction gravity investigate iron journal like magnet magnetic materials motion

factures of a morel		[	
features of a word wall			non–contact
<ul> <li>contribute to discussions about</li> </ul>			non—magnetic
magnets and			5
magnetic force			observation
ST2-9PW-ST		For the class	
describes how	Lesson 2	class science journal	opposing
contact and non-	A magnetic attraction – Lesson focus p5	<ul> <li>TWLH chart</li> </ul>	•••
contact forces affect	• To provide students with hands on, shared experiences of how magnets exert a pull of	word wall	plastic
an object's motion	objects at a distance.		plusite
<ul> <li>predict which</li> </ul>		<ul> <li>team roles chart</li> </ul>	poles
materials will be	Students:	team skills chart	pores
attracted to a	explore whether objects made of different materials are attracted to a magnet	• 1 bar magnet	prediction
magnet and give	<ul> <li>measure how close an object is before attracted to a magnet</li> </ul>	1 paperclip	prediction
reasons for their	find objects around the house which are attracted to a magnet	1 enlarged copy of 'a strong	procedure
predictions		attraction' (Resource sheet 1)	procedure
observe and explain     which objects a		• 1 enlarged copy of	pull
magnet attracts		'information note for families'	pun
<ul> <li>observe the distance</li> </ul>		(Resource sheet 2)	push
of attraction between		collection of objects made	push
objects and a	Mawang Yalbili	from different magnetic and	record
magnet			record
<ul> <li>identify how people</li> </ul>		'Preparation')	nanal
use magnets in their		collection of different sized	repel
work		and shaped magnets	nonulaion
ST2-1WS-S		For each team	repulsion
questions, plans and		<ul> <li>role wristbands or badges for</li> </ul>	aciona
conducts scientific		Director, Manager and	science
investigations, collects and		Speaker	steel
summarises data and		• each team member's science	SIEEI
communicates using		journal	unlike
scientific		<ul> <li>1 magnet (bar, ring or</li> </ul>	unnke
representations		horseshoe)	
<ul> <li>understand the</li> </ul>		• 1 ruler	
purpose and		• 1 copy of 'information note for	
features of a table		families' (Resource sheet 2)	
		• 1 magnet for home task (see	
		'Preparation')	

elights attracted to a magnet       Beside attracted to a magnet         • discuss and compare scalls to dram common understanding       Lesson 3         ST2-9PW-S1       describes how contact and non-contact forces affect         • To provide students with hands-on, shared experiences of how a magnetic force attracts objects mough different materials, and the effect of friction on the movement of a magnet.       Session 1         • dentify how a magnetic force attracts objects mough different materials, and the effect of friction on the movement of a magnet.       • discuss how the tracted is a constrained of different materials.         • dentify how a magnetic force attracts objects mough appendip across sheats made at different materials.       • explore moving a papercip across sheats made at different materials.       • clean science for the clean of the force of high and the school         • discuss how the the the inderstanding of high force-arrow diagrams       • create the inderstanding of high force-arrow diagrams       • relear members science for the clean members science for the clean material (see "Preparent heir understanding of high for the school       • I magnet (bar, fing or horse-shee)       • I magnet (bar, fing or horse-shee)         • students       • explore every day examples of fift for at work in the school       • I magnet (bar, fing or horse-shee)       • I magnet (bar, fing or horse-shee)         • represent their understanding of high on the mode of different material (see "Preparention")       • I copy of Passing through" (Resource sheet 3) per student       • I magnet (bar, fing or horse-shee)				
including the force of	<ul> <li>magnet</li> <li>discuss and compare results to form common understandings</li> <li>ST2-9PW-ST describes how contact and non- contact forces affect an object's motion</li> <li>identify how a magnetic force attracts objects through sheets made of different materials</li> <li>discuss how the thickness of the sheet affects whether the magnetic force affects the paperclip</li> <li>describe how friction affects the paperclip</li> <li>describe how friction affects the movement of objects across different surfaces</li> <li>ST2-1WS-S</li> <li>questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations</li> </ul>	<ul> <li>Feeling the force - Lesson focus p14</li> <li>To provide students with hands-on, shared experiences of how a magnetic force attracts objects through different materials, and the effect of friction on the movement of a magnet.</li> <li>Session 1 - Bumping along Students: <ul> <li>explore moving a paperclip across sheets made of different materials</li> <li>relate their observations to the force of friction </li> <li>Session 2 - Very gripping Students: <ul> <li>represent their understanding of friction through force-arrow diagrams</li> </ul> </li> </ul></li></ul>	<ul> <li>For the class</li> <li>class science journal</li> <li>TWLH chart</li> <li>word wall</li> <li>team roles chart</li> <li>team skills chart</li> <li>1 enlarged copy of 'Passing through' (Resource sheet 3)</li> </ul> For each team <ul> <li>role wristbands or badges for Director, Manager and Speaker</li> <li>each team member's science journal</li> <li>1 magnet (bar, ring or horseshoe)</li> <li>1 paperclip</li> <li>sheets of different material (see 'Preparation')</li> <li>1 copy of 'Passing through' (Resource sheet 3) per student</li> </ul> Session 2 For the class <ul> <li>class science journal</li> <li>TWLH chart</li> </ul>	
including the force of	<ul> <li>represent forces,</li> </ul>			
			team roles chart	

friction, using a force-arrow diagram • record their	team skills chart  For each team
observations in a	
table	<ul> <li>role wristbands or badges for</li> <li>Manager and Speaker</li> </ul>
discuss and	Manager and Speaker
compare ideas	each team member's science
about friction	journal
ST2-9PW-ST Lesson 4	For the class
describes how Dushed and nulled Lesson focus n22	class science journal
	TWLH chart
contact forces and ether	word wall
<ul> <li>an object's motion</li> <li>identify the sides</li> </ul>	team roles chart
(poles) of each ring Students:	team skills chart
magnet and how <i>follow a procedural text to explore attraction and repulsion of magnets</i>	1 bar magnet with poles
they react to each  • discuss North and South poles of magnets	marked
other	• 30 cm length of cotton thread
discuss attraction	1 enlarged copy of 'All lined
and repulsion of	up' (Resource sheet 4)
magnets depending on the orientation of	Optional: magnetic compass
on the orientation of their poles Mawang Yalbili	For each team
measure the	
distance between	<ul> <li>role wristbands or badges for Manager and Speaker</li> </ul>
repelling magnets to	<ul> <li>each team member's science</li> </ul>
observe strength of	journal
magnets ST2-1WS-S	<ul> <li>1 clothes peq</li> </ul>
questions, plans and	• 1 straw
conducts scientific	<ul> <li>4 ring magnets (24 mm</li> </ul>
investigations,	diameter)
collects and	• 1 ruler
summarises data and	<ul> <li>2 bar magnets with poles</li> </ul>
communicates using	marked
scientific	• 1 copy of 'All lined up'
representations	(Resources sheet 4) per team
understand the	member
purpose and	

features of a procedural text follow a procedural text create a labelled diagram participate in class discussions ST2-9PW-ST describes how contact and non- contact forces affect an object's motion describe the different forces acting on a paperclip identify the paperclip's movement changes (it falls) when the magnetic force is removed identify that gravity pulls objects to the Earth ST2-1WS-S questions, plans and conducts scientific	Lesson 5         From a distance - Lesson focus p31         • To provide students with hands-on, shared experiences of how gravity and magnetic forces act from a distance         Students:         • create a floating paperclip model represent their understanding through force-arrow diagrams	<ul> <li>each team member's science journal</li> <li>30 cm length of cotton thread</li> <li>1 paperclip</li> </ul>	
Earth ST2-1WS-S questions, plans and		<ul> <li>each team member's science journal</li> <li>30 cm length of cotton thread</li> </ul>	

<ul> <li>record their thinking in an annohold drawing</li> <li>discuss and compare ideas to fore common understandings</li> <li>ST2-PW-ST contact forces affect an object's motion - support students to represent and explain their understanding about forces that can be excited by one object on another influence function of distance</li> <li>To support students to represent and explain their understanding about forces that can be excited by one object on another influence function of distance</li> <li>To introduce current scientific views.</li> <li>To introduce current scientific views.</li> <li>To consist the thickes about froces sentific investigations, collects and summarises data and communicates using scientific</li> <li>represent their kleas reduct of a factual text</li> <li>the case of text</li> <li>the case of text</li> <li>the case of text</li> <li>the case of the case of the case text</li> <li>the case of text</li> <li>the case o</li></ul>				1
describes how contact and non-       Lesson 1/         forces at work – Lesson focus p42 To support students to design and make a game that uses forces including magnetic force to       For the class         • class science journal	<ul> <li>in an annotated drawing</li> <li>discuss and compare ideas to form common understandings</li> <li>ST2-9PW-ST describes how contact and non- contact forces affect an object's motion</li> <li>support with evidence claims about forces</li> <li>explain their ideas about forces</li> <li>explain their ideas about friction, gravity and magnetic forces</li> <li>ST2-1WS-S questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific represent their ideas through movement and discussion</li> <li>understand the purpose and features of a factual text</li> <li>read and discuss a factual text</li> </ul>	<ul> <li>Do you agree? - Lesson focus p37</li> <li>To support students to represent and explain their understanding about forces that can be exerted by one object on another through direct contact or from a distance</li> <li>To introduce current scientific views</li> </ul> Students: <ul> <li>discuss their thoughts on different claims about forces</li> <li>read a factual text on contact and non-contact forces</li> </ul>	<ul> <li>class science journal</li> <li>TWLH chart</li> <li>word wall</li> <li>1 enlarged copy of 'Forces all around' (Resource sheet 6)</li> </ul> For each student <ul> <li>student science journal</li> <li>1 copy of 'Forces all around' (Resource sheet 6)</li> </ul>	
work.	describes how	Forces at work – Lesson focus p42 To support students to design and make a game that uses forces, including magnetic force, to	<ul><li>For the class</li><li>class science journal</li></ul>	

contact forces affect		- wordwall
an object's motion	Session 1 – Game plan	word wall     team rates shart
<ul> <li>generate and</li> </ul>	•	team roles chart
<ul> <li>generate and develop ideas to</li> </ul>	Students:	team skills chart
make a game	• plan and develop a procedure to make a game that uses magnetic force to work	• 1 enlarged copy of 'Making
<ul> <li>produce a game that</li> </ul>		plans' (Resource sheet 7)
uses magnetic force		
to work	Seccion 2 Came production	
• make changes to the	Session 2 – Game production	For each team
game based on	Students:	role wristbands or badges for
shared ideas and	• follow their procedure to construct a game that meets agreed criteria	Director, Manager and
feedback		Speaker
ST2-1WS-S		each team member's science
questions, plans and		journal
conducts scientific		<ul> <li>1 copy of 'Making plans'</li> </ul>
investigations,		(Resource sheet 7) per
collects and		student
summarises data and		
communicates using		Session 2
scientific		For the class
representations		class science journal
<ul> <li>record ideas as an ideas man</li> </ul>	Mawang Yalbili	• TWLH chart
<ul><li>ideas map</li><li>create an annotated</li></ul>		word wall
<ul> <li>create an annotated drawing of their</li> </ul>		team roles chart
ideas		<ul> <li>team skills chart</li> </ul>
develop a procedure		
and labelled diagram		<ul> <li>equipment to make a game (see 'Preparation')</li> </ul>
of how to make their		
game		For each team
engage in		<ul> <li>role wristbands or badges for</li> </ul>
discussions to		Director, Manager and
compare ideas		Speaker
		each team member's science
		iournal
ST2-9PW-ST		For the class
describes how	Lesson 8	
contact and non-	All together – Lesson focus p49	class science journal
		TWLH chart
		word wall

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contact forces affect	• To provide opportunities for students to represent what they know about how forces can be	team roles chart	
an object's motion	exerted by one object on another through direct contact or from a distance, and to reflect on	<ul> <li>team skills chart</li> </ul>	
<ul> <li>describe how gravity</li> </ul>	their learning	<ul> <li>1 enlarged copy of 'Game</li> </ul>	
and magnetic force		check' (Resource sheet 8)	
are exerted on an	Students:		
object from a			
distance	• review their understanding of contact and non-contact forces through creating an annotated		
describe how friction	force arrow-diagram of their game		
exerts a force on	<ul> <li>evaluate the games and their design process</li> </ul>		
another object when	reflect on their leaning during this unit	For each team	
in contact		<ul> <li>role wristbands or badges for</li> </ul>	
<ul> <li>evaluate a game using established</li> </ul>		Director, Manager and	
criteria		Speaker	
<ul> <li>reflect on their</li> </ul>		<ul> <li>each team member's science</li> </ul>	
learning and		journal	
understanding about		, , , , , , , , , , , , , , , , , , , ,	
the designing and		their completed game (see	
production process		Lesson 7)	
of building a game		• 1 enlarged copy of 'Game	
ST2-1WS-S		check' (Resource sheet 8)	
questions, plans and			
conducts scientific	Mawana Valbili	01/27	
investigations,	Mawang Yalbili	iyu	
collects and			
summarises data and			
communicates using			
scientific			
representations			
<ul> <li>create an annotated</li> </ul>			
drawing of their			
game			
<ul> <li>share and discuss</li> </ul>			
their ideas			
• reflect on their			
learning journey			