



LEGO Resources

Gravity Walking Animals (Passive Dynamic Walker)

Activity (Teaching and Learning resources included)	Duration	Description	Key Skills Developed (Assessment)	Syllabus Areas covered (National Curriculum for Wales)	Learning outcomes, differentiation
Build the Bases	1+ Hours depending on size of class	Teacher to build a working base, then if there is time students can build their own. We built 12 bases before the session.		D3	All students require a base
Talk about Moments	10 minutes	Brief talk about centre of mass, balance, oscillations and moments.	Learners will learn enough about balance to attempt task .	EP7 (discuss risks)	Some students will have prior experience or knowledge they may wish to share, allow learners to lead where possible.
Build Model	10 minutes	Depending on materials, build a simple model that walks.	Learners make predictions and a model to test those predictions.	EP2	Some learners may complete this first time, other may require some assistance.
Test Model	10 minutes	Attach model to base and test the walker on the ramp.	Decide if walker was a success and change if required.	ER2	Some students may get this right first time, most will not, some pupils may lose interest if they are unsuccessful first time.
Adapt and Test	20+ Minutes	Adapt Model to make it walk, or make the model appear how they wish without disabling it.	Learners to make changes to improve the walking ability of walkers. They may also want to make	ER2	This will depend on the learner, highlight that building a working walker is as important as its look so all



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			their walker appear like an animal		students are successful. However getting all students to achieve success should be the main goal of the teacher.
Discussion	10 minutes	Let learners lead a discussion, talk about the walker they made and why, if it worked and why they feel it worked / didn't work.	Discus Gravity and how it changes the movement of the Walkers legs, How can we apply this to the park, see saws and swings.	HTW2 HTW3 ER6 OR3	Let all learners speak, let technical students focus on the technical side and encourage less technical students to talk about their creature or vehicle.