

WARNING:
CHOKING HAZARD - Small parts.
Not suitable for children under 3 years.

Ages 4+



Gears for Fun!



What is STEM?

STEM (A higher focus on hands on Science, Technology, Engineering and Maths) is a movement in pre-school, kindergarten and junior school to encourage more interest and participation in the more scientific and technical subjects that are now considered key to a modern workforce. For example, according to the US department of commerce **STEM** occupations are growing at double the rate of the general job market. This, combined with a reduction in science and mathematics education choices by students at many universities, this has led to concern that the global education system is not producing what we need as tomorrow's workforce.



The importance of STEM in contemporary education

Morphun try to help reverse this trend with **STEM** activities that encourage children to actively and enthusiastically participate in hands on **STEM** subjects and activities from a young age, rather than the hands off curriculum in the old fashioned way. **STEM** education is about creating excited problem solvers designers and critical thinkers who will drive innovation and be a part of a modern economy. The traditional methods seem to be forcing children to learn science and maths by rote.

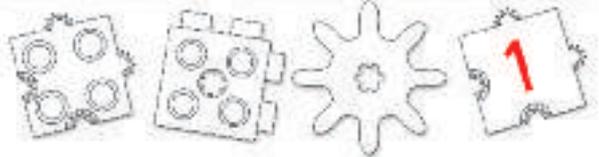
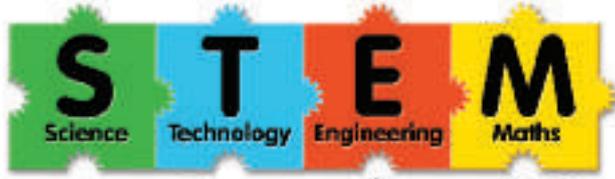


By exposing students to **STEM** from a very young age in a fun and positive environment the rate at which those children go on to study **STEM** subjects as the academic level increases. Morphun helps this with more complex sets for older ages. Hands on **STEM** is widely known to have huge benefits for their general education, level of technical skill and future employment prospects as well as the advantages for society as a whole to having a more skilled and technical workforce for the modern age.

Have Fun Learning with Morphun's Gearphun Starter Sets.



Hi-Q - The Thinkplay sign of our guarantee of long life, high quality, and intelligent educational innovation and value for children. see www.hi-q.org.uk for details of our 5 Year guarantee.



www.facebook.com/morphun



Gears for Fun!



DISCOVER AND STUDY SIMPLE ENGINEERING RULES

In the process of learning about the world around them, children are encouraged in this Starter Gearphun set to discover the world of Morphun gears. **STEM** is an ever more important part of learning, and the international focus on **STEM** with similar emphasis on engineering and of course on gears are a key part of that. In many countries the role of **STEM** is seen as a key contributor to future economic growth, and the application of **STEM** principles should enhance manufacturing and innovation by providing students with suitable thinking, manual and spatial skills.

If your child or student wants to have the best chance to be an engineer, architect or designer, then constructing things with their hands and doing their own designs and solving practical problems is a vital learning process.

These work cards are called; *“Discover geometrical shapes and build some first models”*. Gears for Fun! is aimed at building a basic level of understanding, by the construction of gears models and therefore discovering and seeing the rules of simple engineering.

While playing in a structured fashion, the players can review progress, discuss what they have found out with colleagues, teachers, parents or friends, and then design and make their own creations.

Players and parents or teachers are recommended to visit our **YouTube** link at <https://www.youtube.com/c/morphun> and see our latest Gears videos before reading any further. This will help release the huge educational value and possibilities of our gears sets.

This interactive site will be updated periodically with new gears videos and free educational activities, so keep an eye on it.

The set starts with some simple models so children can familiarise themselves with the slide joining Morphun system to join parts, while making some fun models. We do not attempt at this starter level to be too targeted on educational outcomes and specific learning objectives. That focus comes in the Junior Gearphun sets that have extensive focussed work cards.

At Starter level, our **STEM** is about learning by structured play with physical objects and systems. In a world of too many touch screens and video content, getting hands on practice and developing physical skills is essential to develop a healthy mind ready to learn scientific and practical skills when they get older.

SIMPLE RULES

These first Gearphun work cards offers models and experiments to help define; *“rolling, rotating, assembling, gearing, balancing and creating movement”*. These models allow children to exercise their observation skills, questioning, reasoning in face of the world of gears and setting out into a world of science and technology.

Where possible and to encourage a structured approach, two or more children - usually 4 is best - can work together on a model assembly project. This should enhance learning through debate, team work, problem solving and experimentation. They should discuss and agree who will build which section of each model before starting the exercise. Try to make sure you have good builders with weaker ones in these teams so the teams are balanced and can all achieve the models and activities you have chosen for them and to give the best groups harder models to make.

THE WORK CARDS

The work cards and large instructions sheets are numbered and show model assembly instructions at various levels from very simple to more complex. Each model shows the exact pieces required and the steps to build it. Some are set out on other sheets supplied, and some are only on the work cards. Following the images step by step, the students learn first how Gearphun works and then about the world of moving objects and why they move and how to connect them.

THE ROLE OF THE STOCK KEEPER

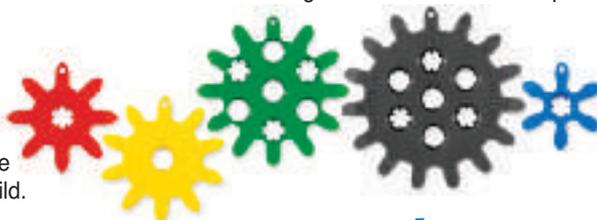
A stock keeper can be added to each team. The stock keeper manages the pieces that are available to each team and makes sure all are returned. At the beginning of the workshop each stock keeper reads the activity sheet or work card, marks or notes the kind and the numbers of the pieces required for the model. Next, the stock keeper gets and supplies the pieces listed on each request and distributes the pieces to his colleagues. If a further build is planned he/she can draw more pieces but must keep a record and return all the pieces at the end of the activity. While the build is in process the stock keeper can observe help and discuss the activities or add more ideas.

OTHER ACTIVITIES

A whole range of other activities at different levels are supplied with this set so that you can interest or challenge different age groups and skill levels. We suggest for example you challenge them to make long lines of gears or gears in a circle or square, and see and discuss which gears go clockwise and which anti-clockwise and why. They can learn and see about how gear teeth need to overlap and mesh well - but not too much - to run smoothly.

A fundamental part of the learning process will always be to encourage them to make also their own designs.

Gearphun is designed to be high quality, long lasting (*with a 5 year parts guarantee*), and very educational. With many exciting new pieces and more gears sizes than other sets, it offers far greater flexibility for design and build.



‘Morphun Bricks that Build in Many Directions’



Gears for Fun! - Index

Gearphun Exercise Brick Pieces ___ Page 2

Level 1 Simple Gear Models _____ Page 3

Level 2 Simple Gear Models _____ Page 4

A Line of Gear Wheels _____ Page 5-6

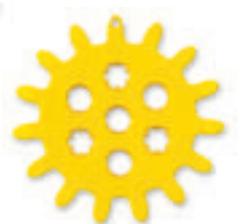
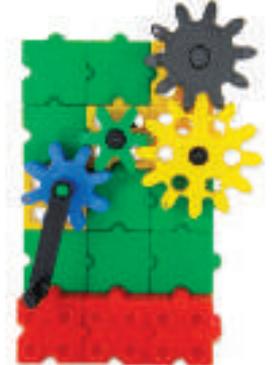
Flying Fish _____ Page 7-8

Ball on the rebound _____ Page 9-10

Windmill _____ Page 11-12

Skateboard _____ Page 13-14

Motorbike _____ Page 15



MORPHUN'S ON-LINE INTERACTIVE LEARNING GAMES PLATFORM



INTERACTIVE gaming between students of one class, school, state or continent. **COMPETITION** and **TEAM BUILDING** skills development.

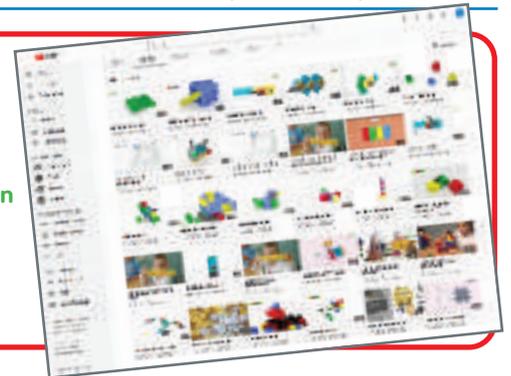


Play our **FREE** Morphun interactive games at <https://morphun.education>

Interactive educational games for Schools and Families - Keep looking for new features as it will be updated every 2-3 months

Check out Morphun's **YouTube** Channels at <https://www.youtube.com/c/morphun>

Morphun's creates international award winning manipulation and construction toys for the classroom. Our range includes Literacy, Numeracy, Construction and Games. We have also released a range of Gears, Pulleys and Chain sets for educational STEM activities. Check out the channel to see amazing 3D instructional videos, adverts, presentations and more.....



New

MORPHUN'S NEW CHAINS AND PULLEYS

Gearphun Chains and Pulleys will offer even more exciting engineering and STEM model making. Pulleys will also enable you to connect gears together with pulley wheels using string or bands.

AGE 5yrs+

