Press release

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Learning about statics and measuring forces

Building static models and measuring forces

fischertechnik GmbH

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The new fischertechnik STEM Statics class set for secondary schools teaches static principles in a simple and easy-to-understand manner, covering topics such as compressive and tensile forces as well as forces in equilibrium of stationary bodies. The results of the practical experiments can be measured and verified with the spring scale contained in the kit.

Why is a triangle so important to the world of statics? Where do we encounter this in day-to-day life? These static principles and others are explored through fischertechnik STEM Statics using practical model examples. The set explores topics such as compressive and tensile forces as well as statics and forces in the equilibrium of stationary bodies. The results of the practical experiments can be measured and verified with the self-assembled contained in the kit. Pupils learn ways of thinking and working with physics with a sense of fun and discovery and retain what they have learned in the long term. Ten models can be built with the STEM Statics construction kit, including a frame house, a crane and various bridges. What happens if struts or angle brackets are removed or added? Stability and strength are tested in 21 different experiments which demonstrate the functional features of supporting structures. This illustrates the relationship between the strength and connection of structural components.

Once a model has been built, tensile and compressive forces can be measured with the spring scale made of fischertechnik building blocks, which demonstrates whether the physical calculations carried out correspond to reality. The set also allows you to test whether a model has been set up correctly or whether further amendments are required to adjust the force distribution. The spring scale can be used for many other experiments during lessons.

Accompanying educational material is available online and contains assignments and their respective solutions in addition to an overview of learning objectives, how long assignments take as well as the respective curriculum references for each of Germany's federal states. School lessons can therefore be given a playful, targeted upgrade with the construction kit without requiring a great deal of preparation.

The components and educational materials are stored in a sturdy storage box with clear compartments into which the parts can be sorted and put away.

fischertechnik's STEM construction kits

All of the products in fischertechnik's Education line are developed in close cooperation with teachers and education experts to meet lesson requirements. The innovative educational materials convey a basic technical understanding and give pupils an ideal preparation for technical professions. fischertechnik's educational construction kits are used around the world to explore the following topics: Mechanics, statics, simple machines, hydraulics, pneumatics, renewable energy, fuel cells, optics and light, electronics, robotics, mechatronics, automation, data logging and Industry 4.0 as well as the Internet of Things. The products remain consistent in terms of meeting quality and sustainability requirements, as each construction kit

is made in Germany and can be combined with other construction kits.

Image captions:

Image 1: Ten different models can be built with the fischertechnik STEM Statics construction kit.

Image 2: Stability and strength are tested in various experiments which demonstrate the functional features of supporting structures.

Images: fischertechnik

The fischer Group of Companies

The fischer Group of Companies, headquartered in Waldachtal in Germany's northern Black Forest, generated sales of 988 million euro in 2021 with a worldwide staff of 5,400 employees. The family-owned company operates 50 subsidiaries in 38 countries and exports to more than 120 countries. It includes the five divisions: fischer fixing systems, fischer Automotive, fischertechnik, fischer Consulting and fischer Electronic Solutions.

fischer fixing systems is the technological market leader in key areas of fixing technology. fischer offers products that deliver technical perfection to a wide range of customers, from do-it-yourselfers to tradespeople to key account partners.

fischer Automotive manufactures high-quality parts for vehicle interiors. The company is highly competent in the plastics processing segment and is an important partner for the automotive industry. Its range of products includes air vents, cup holders, trays and multi-function components.

With its construction kits, fischertechnik is active in both the toymaking and the educational sector. fischertechnik is one of the last remaining toy makers to exclusively develop and produce in Germany.

fischer Consulting evolved from the competence developed in the company itself, which includes the fischer ProcessSystem with its central aim of permanent improvement for the ultimate benefit of the customer. fischer Consulting advises small and medium-sized businesses, government agencies and major companies on their path towards lean and efficient processes.

fischer Electronic Solutions develops and manufactures electronic solutions including product and system developments based on the latest technology as well as custom production orders processed in the company's own production facilities. As an experienced provider of development and production services for custom systems such as multi-touch solutions made of glass and the corresponding controller units, fischer Electronic Solutions forms the perfect link between the customer and the final product.

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