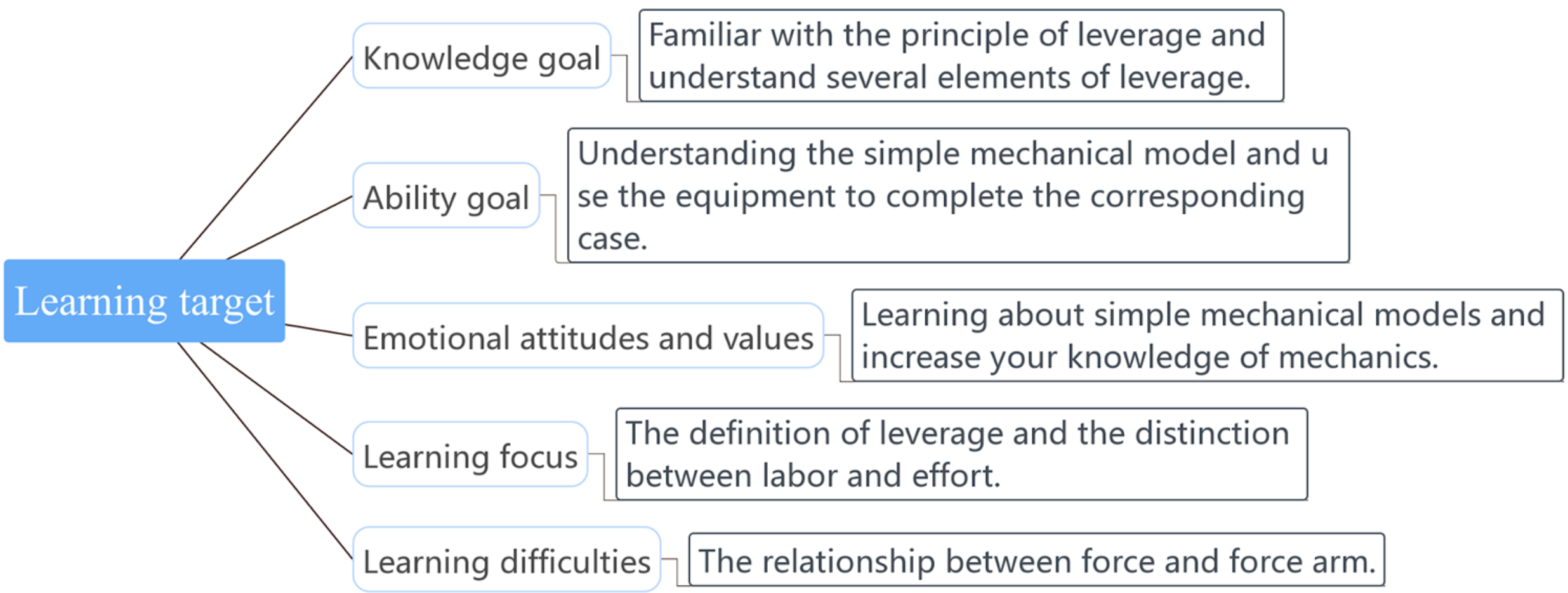
Learning Series
Pliers



This robotics kit is a building block programming robot research and development by Joinmax.

The kit is equipped with various sensors such as sound sensitivity, color sensor, touch sensor, photoelectric sensor, color light, ultrasonic, camera and many building blocks parts. Students can build various building block robots with their imagination, and use graphical programming software to program the robot and experience the joy of hands-on creation.

Learning Target



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Course Introduction



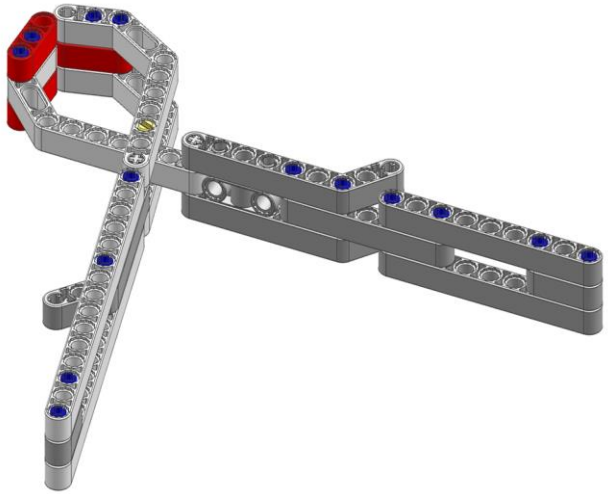
Course Introduction



What principle does the pliers use and what can it be used for?

There are many types of pliers, and it has a wide range of uses. It is an indispensable tool for clamping and cutting workpieces in assembly, repair and installation in various industries.But it has a common basic structure, that is, any hand pliers county consists of three parts: the clamp head, the pin and the clamp handle.

Course Introduction



Pliers

Know about the Pliers

The basic principle of the pliers is to use two levers. At one point in the middle, the pins are cross-connected so that the two ends can move relative to each other.

As long as the tail is operated by hand, the other end can pinch the object. In order to reduce the force of the user's operation, according to the mechanical principle of the lever, the clamp shank is usually longer than the clamp head, so that a stronger clamping force can be obtained with a small force to meet the use requirements.

Teaching New Knowledge



Teaching New Knowledge



Plier
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- Type: model / have corresponding function
- Direction: pick up small objects / clip large objects
- Structure: clamp head / pin / clamp handle
- Appearance: ordinary pliers / pliers

Teaching New Knowledge

Equipment matching: (set the concept as ordinary pliers)

1. The clamp head: because the need to pick up the item, so the clamp head needs a certain degree of curvature, such as use

2. Pin: Considering the problem of stability, use a longer connecting shaft, such as 3 grid connecting shaft

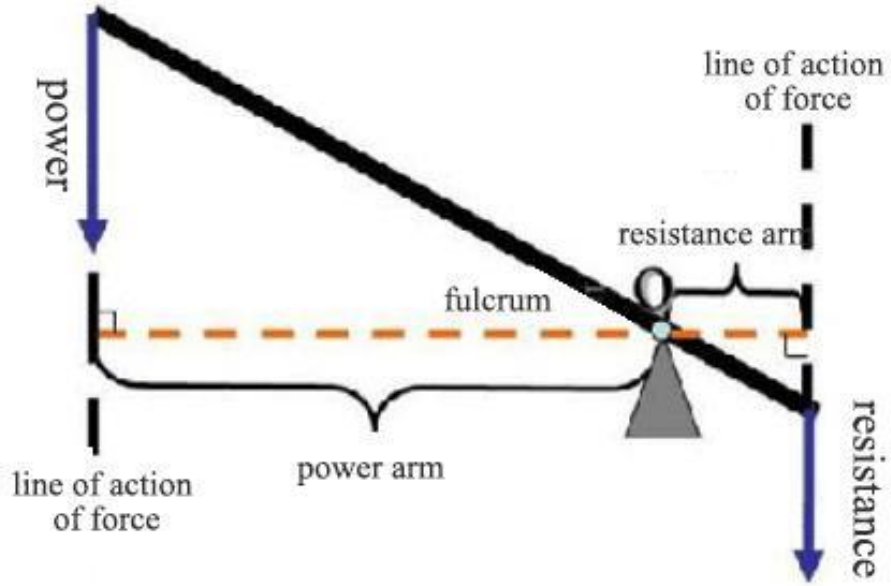
3. Pliers handle: as a power arm, the length needs to be longer than the clamp head, it is recommended to use long beam parts



Teaching New Knowledge

Force arm: The force arm refers to the distance from the fulcrum to the extension of the force. It is an abstract mechanical concept. It does not refer to a specific lever. Students should pay attention to the distinction.

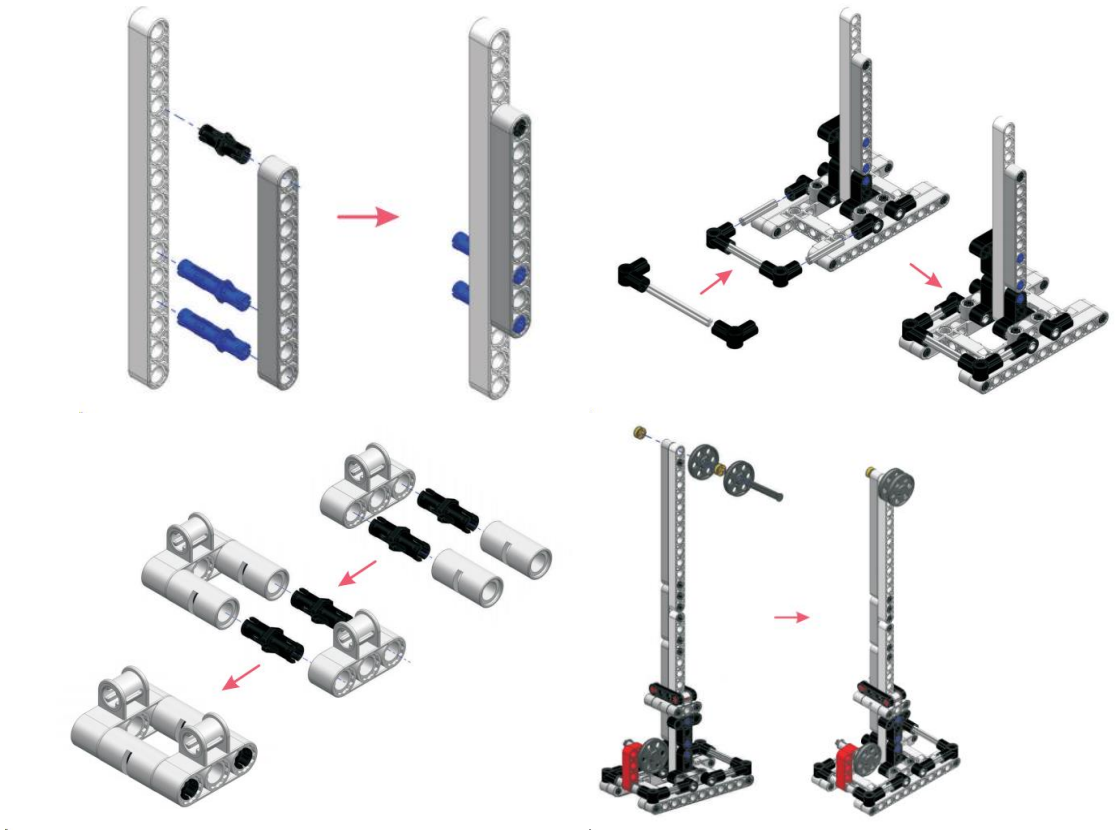
Thus extending out, through the fulcrum and perpendicular to the extension of the power direction, this distance is the power arm; through the fulcrum and perpendicular to the extension of the resistance direction, this distance is the resistance arm.



Task Practice



Task Practice



Assembly requirements

①Stable structure

②Proper gravity

③Shape match

Checking Effect



Test Effect



Reviewing the learning content and deepen the impression.

Question 1 What is the name of robot made today?

Question 2 What materials are used in today's robots?

Question 3 What type of robot are you designing?



Homework

Demonstrate presentations based on your own work, such as the name of the work, the source of the inspiration, what is the most satisfying part of the design, and the mutual evaluation of the works.

Thank you for watching

BE STEM READY

