

Two lever positions, one load

Compare effort
and hand travel.

Explain what changes when the pivot
moves nearer the load.



Recover Monday's lever rule

- 01
Point to the effort, pivot and load.

- 02
What might happen if the pivot moves near the load?

- 03
Choose to test, direct, observe or record.

Check the model before touching

- 01 Adult checks the lever, stable pivot and secured load.

- 02 Use a light load and a small lift target.

- 03 Keep hands clear of the pivot.

- 04 Never flick the lever or launch the load.

What stays the same?

01

The same light load

02

The same effort point

03

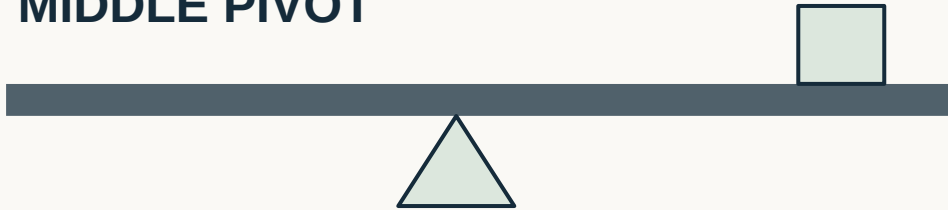
The same small height the load rises

04

The same way of judging or measuring effort

Compare the two arm lengths

MIDDLE PIVOT



PIVOT NEAR LOAD



effort at left • load at right

Nearer the load, the effort arm is longer relative to the load arm.

Predict: what will your hand do?

Try the middle pivot

01

Adult checks the middle pivot mark.

02

Raise the load to the small target height.

03

Notice the effort and the hand's travel.

04

Record what you observed.

Try the pivot nearer the load

01

Adult moves the pivot to its second mark.

02

Keep the same load, effort point and load rise.

03

Does it feel easier, similar or harder?

04

Compare hand travel with the first position.

Make your record precise

RECORD FOR BOTH POSITIONS

Same load/rise checked?
Effort: easier/similar/harder
Hand travel: what changed?

USE HONEST EVIDENCE

Observation is valid evidence.
Add cm only if measured.
Add N only with a force meter.

Pause: was the comparison fair?

01

Did the load stay the same?

02

Did it rise to the same target height?

03

Did the effort act at the same point?

04

Name one observation you want to check.

Repeat one careful comparison

- 01
Correct one setup or recording issue.

- 02
Compare both positions again if safe.

- 03
Keep any earlier observation and explain the change.

Explain the gain and the trade-off

With the pivot nearer the load, our model felt ____.
The hand travelled ____.

For the same load rise, a longer effort arm
can trade a smaller force for more travel.

Tidy and keep the evidence

01

Label EFFORT, PIVOT and LOAD on the sketch.

02

Keep observations beside your explanation.

03

Return the light load and all small parts.

What would help next time?

- 01 Did the equipment or waiting make learning harder?

- 02 Point, sign, speak, write—or pass privately.

- 03 Tell the adult teaching this lesson.

- 04 Agree one useful change and check whether it helps.

Show what you can explain

01

Supported: name the turning point of a lever.

02

Standard: why can a near-load pivot help lifting?

03

Stretch: explain why the benefit has a cost.

Check the force–distance trade-off

The pivot is the turning point.
Moving it near the load can reduce
the effort force.

The effort end travels farther. Real friction and
bending can affect the result.

