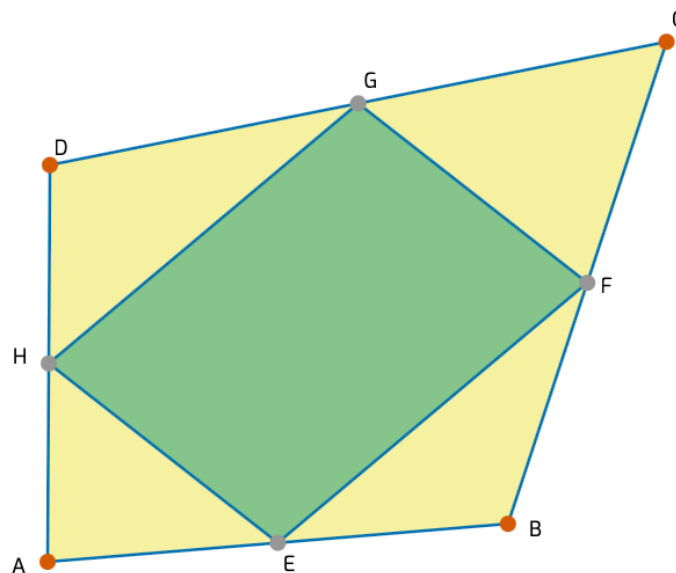


Midpoint Quadrilateral

Construction

- ▶ Choose any four points and connect them to obtain a quadrilateral $ABCD$.
- ▶ Construct the midpoints $E, F, G,$ and H of the sides of $ABCD$.
- ▶ Connect these midpoints to get the midpoint quadrilateral $EFGH$.



Exploration

- ▶ Drag any of the vertices $A, B, C,$ and D and observe the midpoint quadrilateral. What kind of quadrilateral do you think $EFGH$ is? Write down your conjecture.
- ▶ Draw the diagonals of quadrilateral $ABCD$ as auxiliary lines. Try to prove your conjecture.
- ▶ Show grid lines. Construct special types of quadrilaterals by placing the vertices of the quadrilateral $ABCD$ on grid points. Describe what kind of midpoint quadrilaterals you observe.
- ▶ Write down your results with sketches and proofs.