Work done calculations:
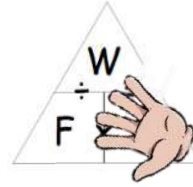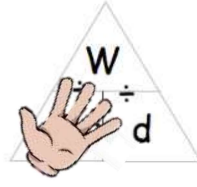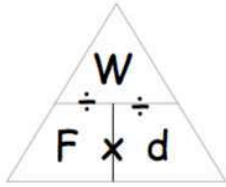
Work done (J) = Force (N) x Distance (m)
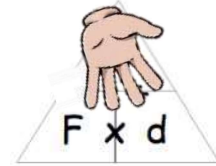
Worked example: What is the work done if:

(a) Force = 3N, distance = 6m

STEP 1: Write the equation:

Work done (J)	=	Force (N)	×	Distance (m)

STEP 2: Calculate:

	=	3N	×	6m
Work done (J)	=	18J		

(b) Force = 20N, distance = 5m

STEP 1: Write the equation:

Work done (J)	=	Force (N)	×	Distance (m)

STEP 2: Calculate:

	=	20N	×	5m
Work done (J)	=	100J		

1. What is the work done if:

(a) Force = 10N, distance = 10m

STEP 1: Write the equation:

Work done (J)	=	Force (N)	×	Distance (m)

STEP 2: Calculate:

	=		×	
Work done (J)	=			

(b) Force = 50N, distance = 5m

STEP 1: Write the equation:

Work done (J)	=	Force (N)	×	Distance (m)

STEP 2: Calculate:

	=		×	
Work done (J)	=			

(c) Force = 750N, distance = 46m

STEP 1: Write the equation:

Work done (J)	=	Force (N)	×	Distance (m)

STEP 2: Calculate:

	=		×	
Work done (J)	=			

(d) Force = 267N, distance = 49m

STEP 1: Write the equation:

Work done (J)	=	Force (N)	×	Distance (m)

STEP 2: Calculate:

	=		×	
Work done (J)	=			

2. What is the force if:

(a) Work done = 1000J, distance = 2m

STEP 1: Write the equation:

	=		÷	

STEP 2: Calculate:

	=		÷	
Force (N)	=			

(b) Work done = 70J, distance = 5m

STEP 1: Write the equation:

	=		÷	

STEP 2: Calculate:

	=		÷	
Force (N)	=			

(c) Work done = 3600J, distance = 40m

STEP 1: Write the equation:

	=		÷	

STEP 2: Calculate:

	=		÷	
Force (N)	=			

(d) Work done = 4539J, distance = 51m

STEP 1: Write the equation:

	=		÷	

STEP 2: Calculate:

	=		÷	
Force (N)	=			

3. What is the distance if:

(a) Force = 100N, Work done = 2300J

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Calculate:

= [____] ÷ [____]

Distance (m) = [____]

(b) Force = 20N,   Work done = 4680J

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Calculate:

= [____] ÷ [____]

Distance (m) = [____]

(c) Force = 10N,   Work done = 5800J

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Calculate:

= [____] ÷ [____]

Distance (m) = [____]

(d) Force = 79N, Work done = 5056J

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Calculate:

= [____] ÷ [____]

Distance (m) = [____]

Stretch and challenge: Calculate:

Work done if:

(a) Force = 10N,   distance = 10cm

STEP 1: Write the equation:

[____] = [____] × [____]

STEP 2: Conversions:

cm to m   [____] = [____]

STEP 2: Calculate:

= [____] × [____]

Work done (J) = [____]

(a) Force = 25N,   distance = 11mm

STEP 1: Write the equation:

[____] = [____] × [____]

STEP 2: Conversions:

mm to m   [____] = [____]

STEP 2: Calculate:

= [____] × [____]

Work done (J) = [____]

Force if:

(c) Work done = 10KJ,   distance = 2m

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Conversions:

KJ to J   [____] = [____]

STEP 2: Calculate:

= [____] ÷ [____]

Force (N) = [____]

(d) Work done = 15KJ,   distance = 36cm

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Conversions:

KJ to J   [____] = [____]

cm to m   [____] = [____]

STEP 2: Calculate:

= [____] ÷ [____]

Force (N) = [____]

Distance if:

(e) Force = 100mN, Work = 23J

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Conversions:

mN to N   [____] = [____]

STEP 2: Calculate:

= [____] ÷ [____]

Distance (m) = [____]

(f) Force = 23N, Work = 23KJ

STEP 1: Write the equation:

[____] = [____] ÷ [____]

STEP 2: Conversions:

KJ to J   [____] = [____]

STEP 2: Calculate:

= [____] ÷ [____]

Distance (m) = [____]

HINT: Remember the units , do any of these units need converting?