

University of Dundee

Cell Survival

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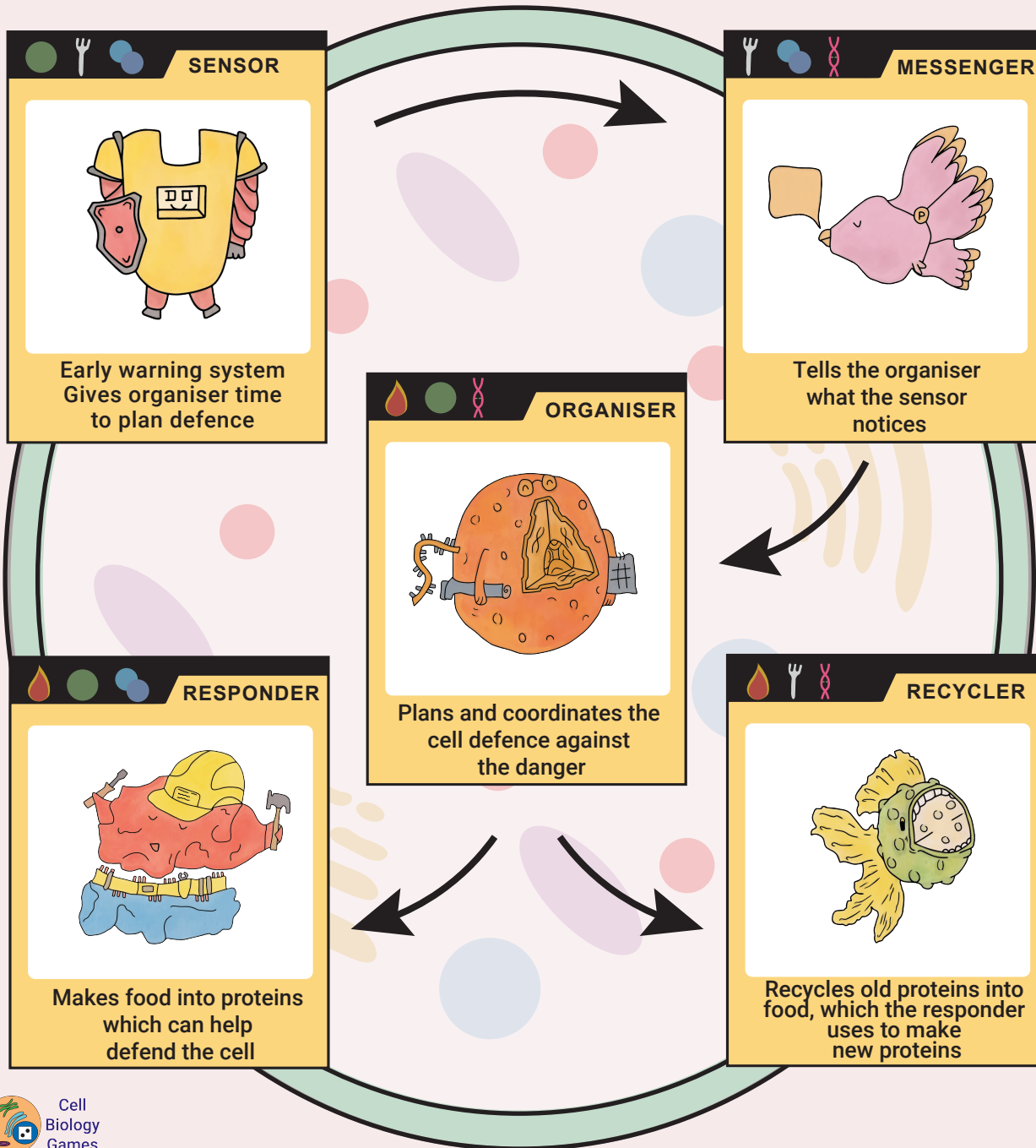
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CELL SURVIVAL

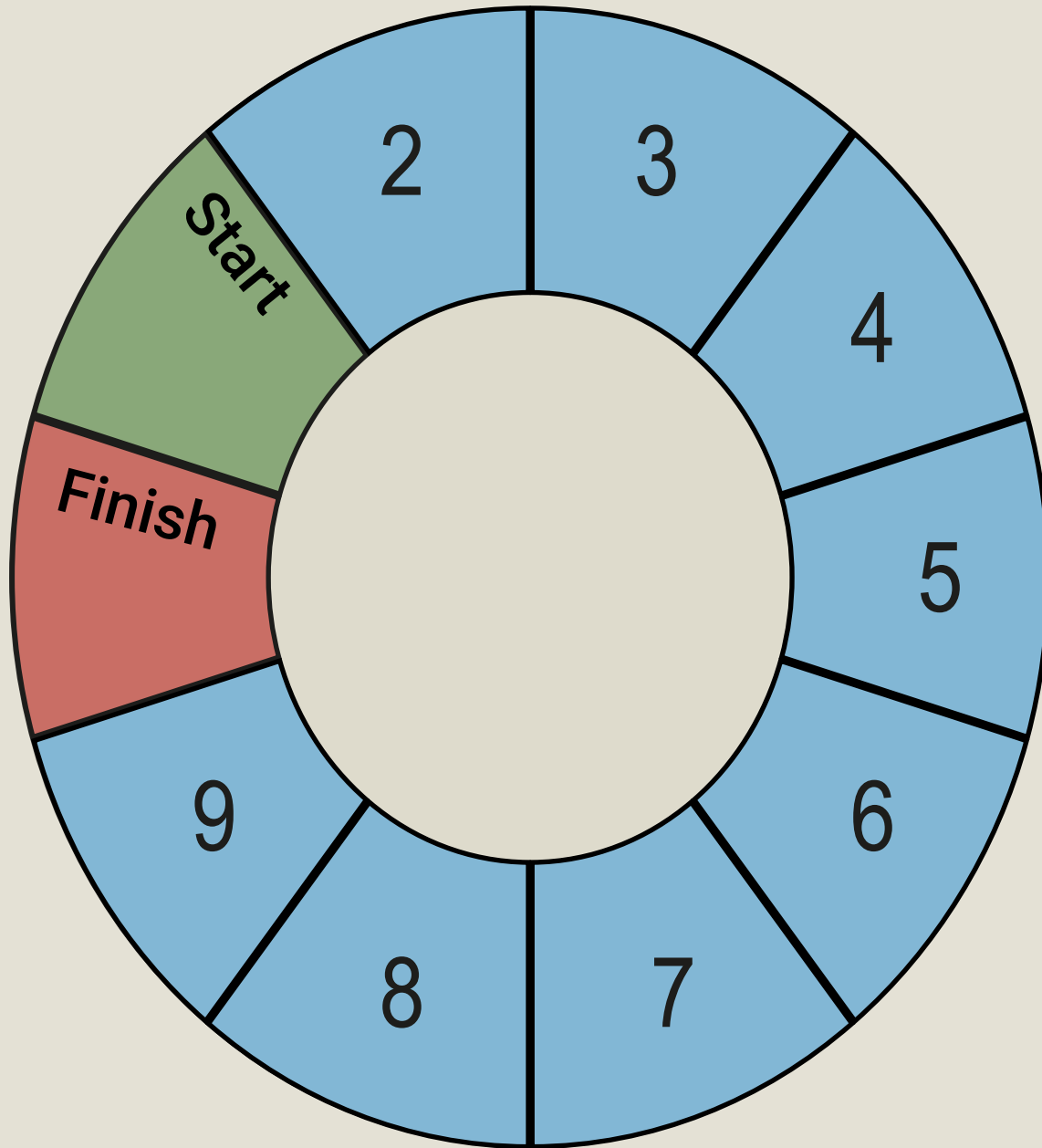


Cell defence cards

Cell danger cards


Cell danger!

Game mode card



Yeast Mode

3-4 μm

Defence	Danger

Amoeba Mode

10-800 μm

Defence	Danger

Ciliate Mode

10 μm - 4 mm

Defence	Danger

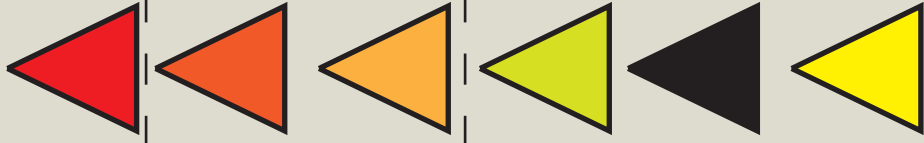
Multicellular Mode

8 μm - 1 mm

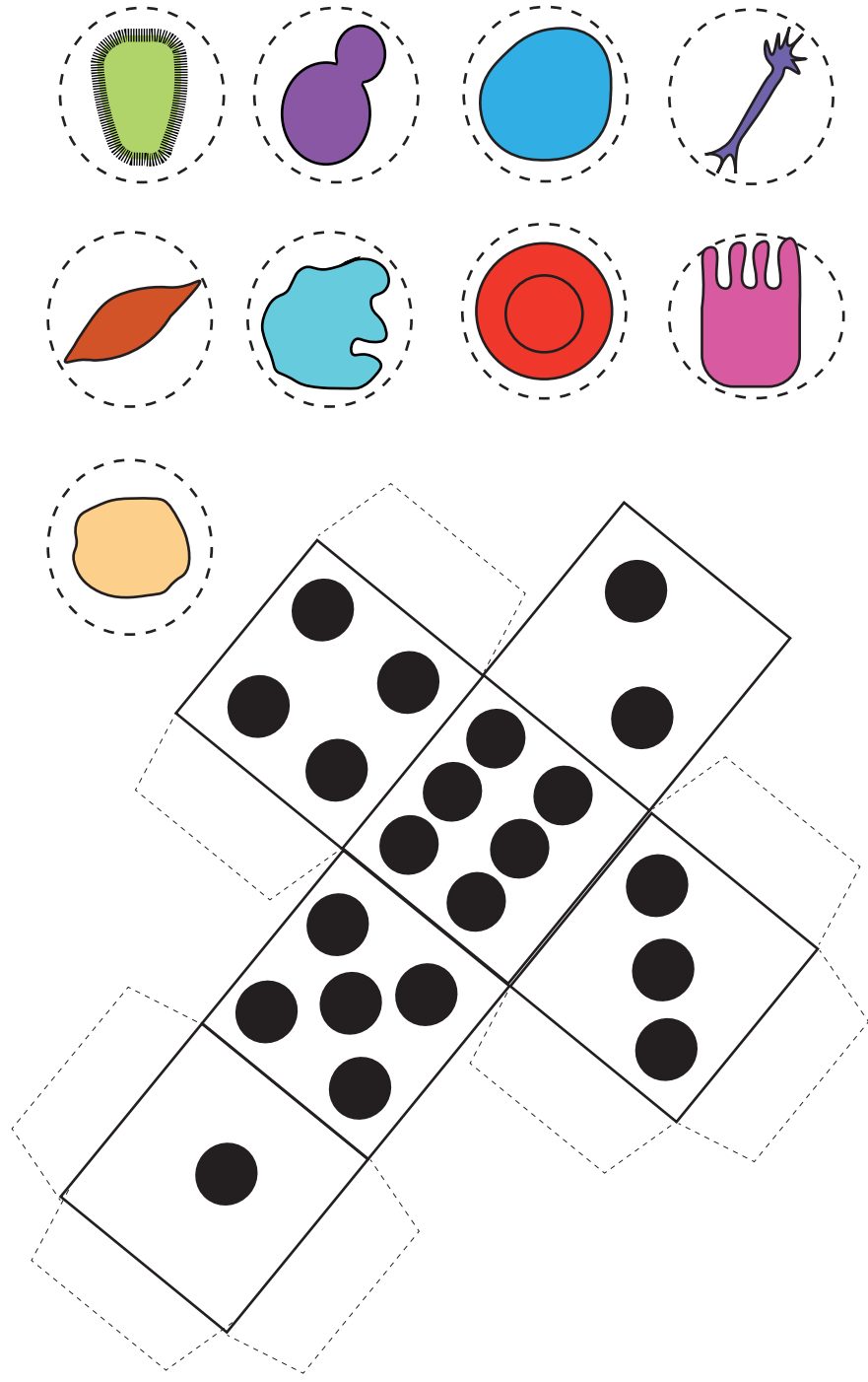
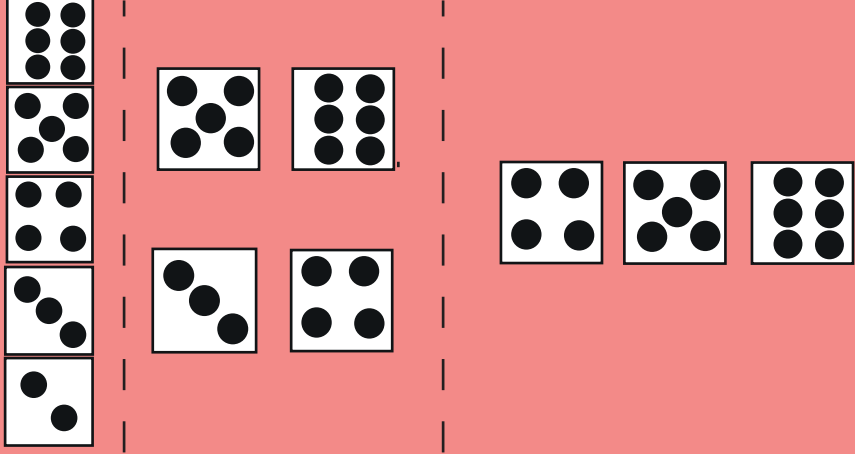
Defence	Danger

Danger Levels

Defence



Danger



INFECTION



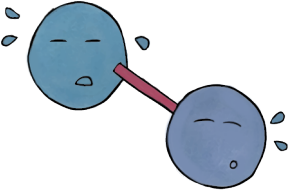
Microbes can make our cells poorly

HUNGER



Without enough food, cells will starve

LOW OXYGEN




Without any Oxygen cells can't make enough energy

HEAT



Makes proteins not do their jobs in the cell as well

MUTATION



Mutations can make proteins work too well or not well enough

INFECTION



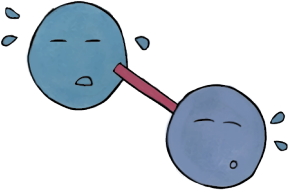
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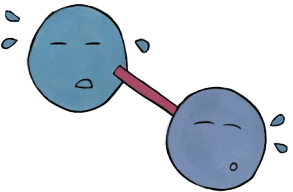
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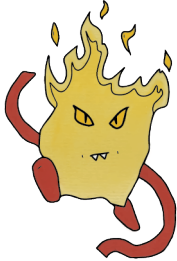
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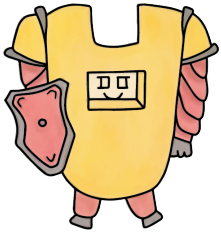
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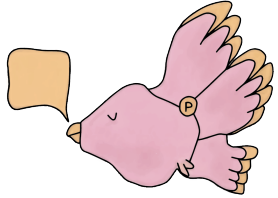
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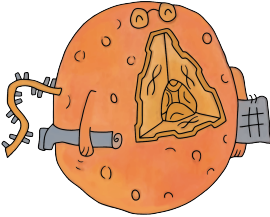
Early warning system
Gives organiser time to plan defence

MESSENGER



Tells the organiser what the sensor notices

ORGANISER



Plans and coordinates the cell defence against the danger

RESPONDER



Makes food into proteins which can help defend the cell

RECYCLER



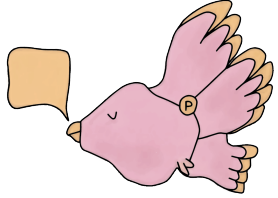
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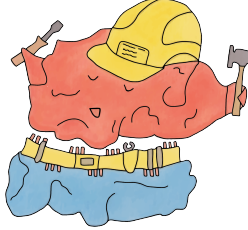
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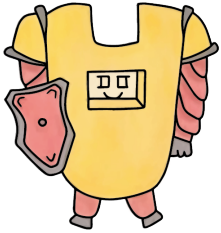
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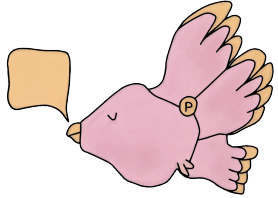
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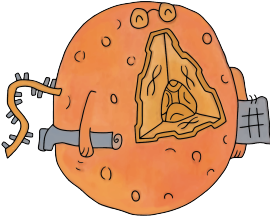
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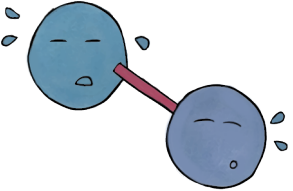
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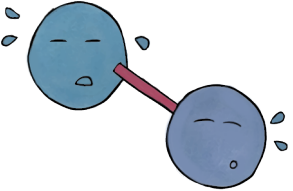
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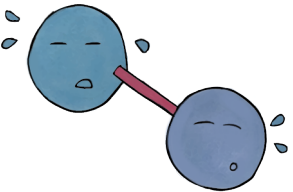
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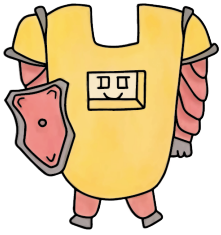
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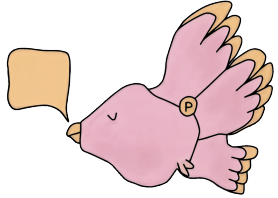
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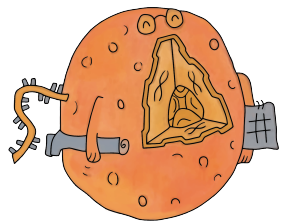
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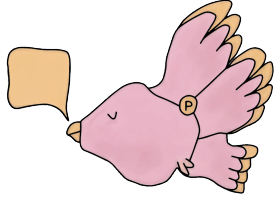
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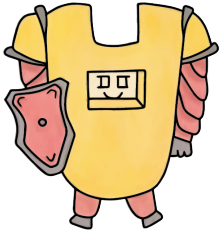
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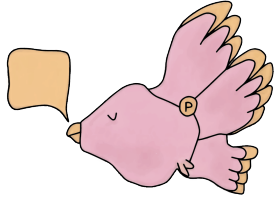
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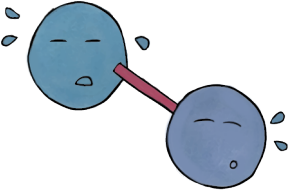
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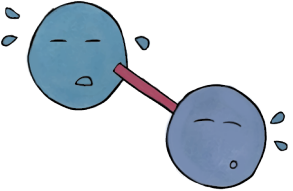
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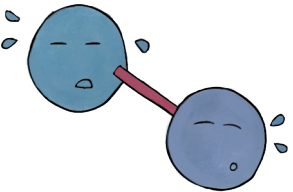
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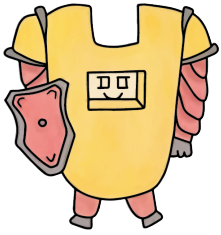
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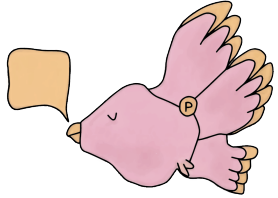
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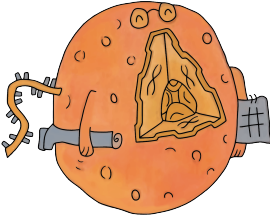
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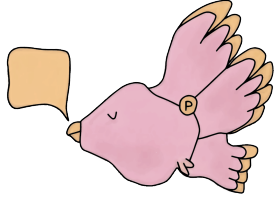
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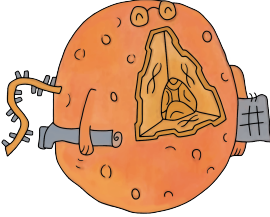
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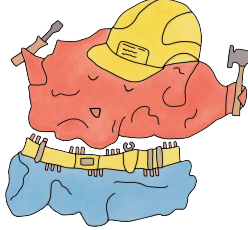
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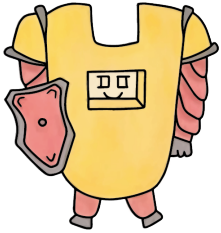
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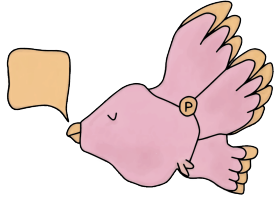
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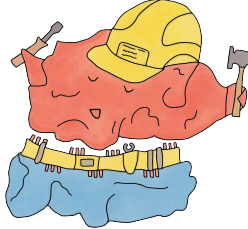
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