



# Shark or fish?

## Population model worksheet

Name: \_\_\_\_\_

New population =  $N + r \times N \times (1 - N \div 1,000) - F \times N$ . Round to whole animals. Both start at  $N = 1,000$ .

| Year                                | 0     | 1   | 2 | 3 | 4 | 5 |
|-------------------------------------|-------|-----|---|---|---|---|
| Shark ( $r = 0.06$ ), $F = 10\%$    | 1,000 | 900 |   |   |   |   |
| Fast fish ( $r = 0.6$ ), $F = 10\%$ | 1,000 |     |   |   |   |   |

What happens to each population? Why?

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Predict: what happens to the shark if fishing rises to 30%?

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Roughly what is the highest fishing rate the shark could survive? Explain using  $r$ .

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Name two real-world factors the model leaves out

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