

RVR School-of-Fish Challenge

COMMUNICATION: send a signal, coordinate a group

Name(s): _____ RVR ID: _____ Date: _____

TOPIC Infrared messaging	OBJECTIVE Program a leader and follower so two or more RVRs coordinate without hand steering.	EVIDENCE A two-state group pattern, program evidence, and reflection.
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Biomimicry hook

A school of fish can turn together without one fish physically steering the others. Each fish reads nearby signals and responds. Your robots will use infrared messages to do the same kind of coordination.

Roles

Leader	Follower
Broadcasts on the agreed channel and performs the first movement.	Listens on the same channel, then performs its response.
Tests one signal at a time.	Uses follow-channel behavior and keeps enough space to move safely.

Communication plan

Signal/channel	Leader action	Follower action	What the group should look like

Challenge constraints

- ☐ Use at least two RVRs.
- ☐ Begin with one clear formation.
- ☐ A broadcast triggers a coordinated change.
- ☐ Show a second stable formation.
- ☐ No hand steering after the run starts.
- ☐ Stop safely if robots cross paths.

Test log

Run	Message sent?	Followers responded?	Spacing stayed safe?	Next change
1				
2				
3				

Evidence + reflection

- ☐ Short video of the coordinated run
- ☐ Leader and follower code screenshots
- ☐ Reflection questions completed

The robots behaved like a system because _____.

The most important communication or spacing change was _____.

A coordinated robot group could help solve _____ by _____.
