SESSION 4 | HBS: CELLS FORM TISSUES DURING DEVELOPMENT

The Cells That Build the Face

Essential question: Which cells fill the facial tissues, and how do they get there?

TODAY'S TAKE-HOME **Cranial neural crest cells are traveling builders. Their route, arrival, and growth help create facial tissues.**

Bring yesterday forward

Yesterday: an interrupted fusion can begin before edges ever try to join.

Quick reading

Neural crest cells travel into the head and help build facial tissues. A marker can show where cells are, but it does not prove why they moved.

Optional reading: https://pmc.ncbi.nlm.nih.gov/articles/PMC11 072 871/

Deck map

Slides 5-6: study and question the picture | Slide 7: name the rule | Slide 8: read the biology evidence | Slides 9-11: transfer and decide | Slides 12-13: exit and bridge.

The visual in words

Leave the neural folds	Travel in organized streams	Populate and build facial tissue

Build the idea

Model start: Cranial neural crest cells start near the forming neural tube, migrate into the head, and help build facial connective tissue, cartilage, and bone.

- Draw arrows from the neural folds to a facial prominence.

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- Name two tissues cranial neural crest cells help build.

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- Predict what could happen if too few cells reach a prominence.

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Use the analogy, then return to the science

ANALOGY	BIOLOGY
Traffic system	Cars are cells. Roads are pathways and matrix. Signals give direction. Barriers can change a destination.

Apply the model to Mateo

This lesson supplies a mechanism for questions. It does not identify the cause of Mateo's cleft.

What can this lesson explain? What cannot it prove?

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Exit ticket and next unlock

EXIT	NEXT
Explain how a migration problem could later look like a fusion problem.	**Once cells arrive, how do nearby cells with the same DNA make different fates?**

Four truths check

Truth 3: Cells move to form structures. Circle the part of today's notes that supports this truth.