|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  | Explain mathematical |  |  | Mathematical |  |  | Building student |  |  |
|  |  | Teacher role |  |  | Questioning |  |  |  |  |  |  | responsibility within the |  |  |
|  |  |  |  |  |  | thinking |  |  | representations |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | community |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level 0 | Teacher is at the front | Teacher is only |  | Teacher questions focus | Representations are |  | Culture supports |  |
|  | of the room and | questioner. Questions |  | on correctness. | missing, or teacher |  | students keeping ideas |  |
|  | dominates | serve to keep students |  | Students provide short | shows them to |  | to themselves or just |  |
|  | conversation. | listening to teacher. |  | answer-focused | students. |  | providing answers when |  |
|  |  |  |  | Students give short |  | responses. Teacher may |  |  |  |  | asked. |  |
|  |  |  |  | answers and respond to |  | give answers. |  |  |  |  |  |  |  |
|  |  |  |  | teacher only. |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Level 1 | Teacher encourages the | Teacher questions begin |  | Teacher probes student | Students learn to create |  | Students believe that |  |
|  | sharing of math ideas | to focus on student |  | thinking somewhat. One | math drawings to depict |  | their ideas are |  |
|  | and directs speaker to | thinking and less on |  | or two strategies may | their mathematical |  | acceptable by the |  |
|  | talk to the class, not to | answers. Only teacher |  | be elicited. Teacher | thinking. |  | classroom community. |  |
|  | the teacher only. | ask questions. |  | may fill in an |  |  |  |  | They begin to listen to |  |
|  |  |  |  |  |  |  |  | explanation. Students |  |  |  |  | one another |  |
|  |  |  |  |  |  |  |  | provide brief |  |  |  |  | supportively and restate |  |
|  |  |  |  |  |  |  |  | descriptions of their |  |  |  |  | in their own words what |  |
|  |  |  |  |  |  |  |  | thinking in response to |  |  |  |  | another student has |  |
|  |  |  |  |  |  |  |  | teacher probing. |  |  |  |  | said. |  |
|  |  |  |  |  |  |  |  |  |
| Level 2 | Teacher facilitates | Teacher asks probing |  | Teacher probes more | Students label their |  | Students believe that |  |
|  | conversation between | questions and facilitates |  | deeply to learn about | math drawings so that |  | they are math learners |  |
|  | students, and | some student-to- |  | student thinking. | others are able to follow |  | and that their ideas and |  |
|  | encourages students to | student talk. Students |  | Teacher elicits multiple | their mathematical |  | the ideas of their |  |
|  | ask questions of one | ask questions of one |  | strategies. Students | thinking. |  | classmates are |  |
|  | another. | another with prompting |  | respond to teacher |  |  |  |  | important. They listen |  |
|  |  |  |  | from teacher. |  | probing and volunteer |  |  |  |  | actively so that they |  |
|  |  |  |  |  |  |  |  | their thinking. Students |  |  |  |  | can contribute |  |
|  |  |  |  |  |  |  |  | begin to defend their |  |  |  |  | significantly. |  |
|  |  |  |  |  |  |  |  | answers. |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Level 3 | Students carry the | Student-to-student talk |  | Teacher follows student | Students follow and |  | Students believe that |  |
|  | conversation | is student initiated. |  | explanations closely. | help shape the |  | they are math leaders |  |
|  | themselves. Teacher | Students ask questions |  | Teacher asks students | descriptions of others’ |  | and can help shape the |  |
|  | only guides from the | and listen to responses. |  | to contrast strategies. | math thinking through |  | thinking of others. They |  |
|  | periphery of the | Many questions ask |  | Students defend and | math drawings and may |  | help shape others’ math |  |
|  | conversation. Teacher | “why” and call for |  | justify their answers | suggest edits in others’ |  | thinking in supportive, |  |
|  | waits for students to | justification. Teacher |  | with little prompting | math drawings. |  | collegial ways and |  |
|  | clarify thinking of | questions may still |  | from the teacher. |  |  |  |  | accept the same |  |
|  | others. | guide discourse. |  |  |  |  |  |  |  | support from others. |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Hufferd-Ackles, Fuson, Sherin (2004)

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