 **Math Weekly Lesson Preparation Guide** 

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| **Teacher Name:** OWEN W. JAMES/ Dr. HESS-TAYLOR | **Grade/Subject:**  MATHEMATICAL REASONING |
| **Week of:** April 7—April 11, 2024 | **Unit:**  COUNTING METHODS AND PROBABILITY THEORY**Lesson Numbers:** 11.6-11.8 |

*Purpose: The Weekly Lesson Preparation Guide is to provide a structure that encourages teachers to think through and internalize the daily/weekly instructional expectations.*

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| ***Planning Questions***  | **Lesson 11-6** | **Lesson 11-6** | **Lesson 11-7** | **Lesson 11-7** |  **Lesson 11-8** |
| **Do Now:** | BELLWORK 11.6Mutually Exclusive Probability | BELLWORK 11.6AMutually Exclusive Probability | BELLWORK 11.7ConditionalProbability | BELLWORK 11.7AConditionalProbability | BELLWORK 11.8Expected Value |
| **Standard(s):**What is the focus of this lesson? Which specific Tennessee standards are being addressed in this lesson? | **MR.D.ID.A.7** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Evaluate strategies and make decisions based on expected values (for example, whether a team should pursue a higher-scoring option with a smaller probability of success or a lowerscoring option with a higher probability of success; whether a homeowner should file a small insurance claim given the probability that the monthly cost of insurance will rise as a result). | **MR.D.ID.A.7** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Evaluate strategies and make decisions based on expected values (for example, whether a team should pursue a higher-scoring option with a smaller probability of success or a lowerscoring option with a higher probability of success; whether a homeowner should file a small insurance claim given the probability that the monthly cost of insurance will rise as a result). | **MR.D.ID.A.7** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Evaluate strategies and make decisions based on expected values (for example, whether a team should pursue a higher-scoring option with a smaller probability of success or a lowerscoring option with a higher probability of success; whether a homeowner should file a small insurance claim given the probability that the monthly cost of insurance will rise as a result). | **MR.D.ID.A.7** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Evaluate strategies and make decisions based on expected values (for example, whether a team should pursue a higher-scoring option with a smaller probability of success or a lowerscoring option with a higher probability of success; whether a homeowner should file a small insurance claim given the probability that the monthly cost of insurance will rise as a result). | **MR.D.ID.A.7** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Evaluate strategies and make decisions based on expected values (for example, whether a team should pursue a higher-scoring option with a smaller probability of success or a lowerscoring option with a higher probability of success; whether a homeowner should file a small insurance claim given the probability that the monthly cost of insurance will rise as a result). |
| **Objective(s):**What is the purpose of this lesson and how will this lesson prepare students for success on the unit assessment? How does it coherently connect to previous lessons and build to future ones? | I can find the probability of one event or a second event occurring, or the probability that an event will not occur. | I can find the probability of one event or a second event occurring, or the probability that an event will not occur. | I can find the probability of one event or a second event occurring, or the probability that an event will not occur. | I can find the probability of one event or a second event occurring, or the probability that an event will not occur. | I can compute expected value using probability, and use it to solve applied problems. |
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| **Modeling:**Complete all tasks included in the lesson and review the sample/anticipated student responses.For each task consider:* What are the multiple solution paths students might take to solve this problem?
* What is the purpose of this task? Specifically, which aspect(s) of rigor are being addressed (conceptual understanding, procedural fluency, and/or application)? How does this differ based on the solution path?
* Given this purpose, what key concepts and vocabulary might students need to understand to access the task? (Consider concepts and vocabulary from the prior grade that might need to be re- addressed)
 | SECTION 11.6Guided Practice 11.6  Procedural Skill & Fluency, ApplicationVocabulary:• probability • experiment • sample space • event • theoretical probability • empirical probability • fair • law of large numbers• complement • mutually exclusive • odds in favor • odds against • house odds• independent events • dependent events • conditional probability | SECTION 11.6AGuided Practice 11.6A  Procedural Skill & Fluency, ApplicationVocabulary: • probability • experiment • sample space • event • theoretical probability • empirical probability • fair • law of large numbers• complement • mutually exclusive • odds in favor • odds against • house odds• independent events • dependent events • conditional probability | SECTIOM 11.7Guided Practice 11.7Procedural Skill & Fluency, Conceptual Understanding, Vocabulary: • probability • experiment • sample space • event • theoretical probability • empirical probability • fair • law of large numbers• complement • mutually exclusive • odds in favor • odds against • house odds• independent events • dependent events • conditional probability | SECTIOM 11.7AGuided Practice 11.7AProcedural Skill & Fluency, Conceptual Understanding, Vocabulary: • probability • experiment • sample space • event • theoretical probability • empirical probability • fair • law of large numbers• complement • mutually exclusive • odds in favor • odds against • house odds• independent events • dependent events • conditional probability | SECTION 11.8Guided Practice 11.8Procedural Skill & Fluency, Conceptual Understanding, Vocabulary: • probability • experiment • sample space • event • theoretical probability • empirical probability • fair • law of large numbers• complement • mutually exclusive • odds in favor • odds against • house odds• independent events • dependent events • conditional probability |
| **Check For Understanding:**What evidence of student learning will you look for to reveal understanding of the grade-level standard(s)? (refer to the [Instructional Focus Document](https://scsk12.sharepoint.com/%3Ab%3A/s/CIMathLinks/EYpqxmc9g99Ok0WoLv0Xk-IBoDr700BY_sWN5u2zqSEUdA?e=lzzd50) Evidence of Learning Statements) | Practice 11-6 | Practice 11-6A | Practice 11-7 | Practice 11-7A | Practice 11-8 |
| **Engagement:**In what ways will students use the Standards for Mathematical Practice to develop mathematical understandings? | Attention to PrecisionTry It ExerciseAggressively Monitor to help shape grouping  | Make Sense of Problem and Persevere in solving themTry It ExerciseAggressively Monitor to help shape grouping | Make Sense of Problem and Persevere in solving themTry It ExerciseAggressively Monitor to help shape grouping | Make Sense of Problem and Persevere in solving themTry It ExerciseAggressively Monitor to help shape grouping | Make Sense of Problem and Persevere in solving themTry It ExerciseAggressively Monitor to help shape grouping |
| What supports will you build into the lesson to ensure all students have the opportunity to experience success in this grade level work? How can you ensure all students will have access to grade level opportunities in the lesson? (refer to the [Instructional Focus Document's](https://scsk12.sharepoint.com/%3Ab%3A/s/CIMathLinks/EYpqxmc9g99Ok0WoLv0Xk-IBoDr700BY_sWN5u2zqSEUdA?e=lzzd50) Instructional Focus Statements) | 11-6 Mathematical Literacy and Vocabulary | 11-6 Mathematical Literacy and Vocabulary | 11-7 Mathematical Literacy and Vocabulary | 11-7 Mathematical Literacy and Vocabulary | 11-8 Mathematical Literacy and Vocabulary |
| **Check For Understanding:**Where might your students struggle? What mathematical mistakes or misconceptions do you anticipate? | Vocabulary and Literacy  | Vocabulary and Literacy  | Vocabulary and Literacy  | Vocabulary and Literacy  | Always ensure that students understand the academic language embedded.  |
| **Check For Understanding/Engagement:**What skills/concepts and/or mathematical vocabulary may need reinforcement? |  |  |  |  |  |
| **Check For Understanding/Engagement:**What probing questions might you ask to encourage perseverance or push students to new understanding? What question would you use to elicit prior content knowledge, connect to students’ experiences, and set up the task to ensure students understand the task without over-scaffolding or funneling?What questions might you ask to foster discussions around mathematical connections between anticipated student strategies? | How do we distinguish between permutation and combination problems? What is the combination notation? How do we solve problems involving combinations using the combinations formula? | How do we distinguish between permutation and combination problems? What is the combination notation? How do we solve problems involving combinations using the combinations formula? |  How do we distinguish between permutation and combination problems? What is the combination notation? How do we solve problems involving combinations using the combinations formula? | How do we distinguish between permutation and combination problems? What is the combination notation? How do we solve problems involving combinations using the combinations formula? | How do we distinguish between permutation and combination problems? What is the combination notation? How do we solve problems involving combinations using the combinations formula? |
| **Individual Student Learning, Group Learning and/or Student to Student Learning. Check For Understanding/Engagement:**How might you strategically group or partner students during discussion to support building understanding? | Grouping will take place according to the daily Check for Understanding responses. Tier 1 Students will be group according to quick response and achievement of task. Tier 2 will be group according to minimum gaps in the learning. Tier 3 will work with teacher support and merge out into the other tier as understanding progress. | Grouping will take place according to the daily Check for Understanding responses. Tier 1 Students will be group according to quick response and achievement of task. Tier 2 will be group according to minimum gaps in the learning. Tier 3 will work with teacher support and merge out into the other tier as understanding progress. | Grouping will take place according to the daily Check for Understanding responses. Tier 1 Students will be group according to quick response and achievement of task. Tier 2 will be group according to minimum gaps in the learning. Tier 3 will work with teacher support and merge out into the other tier as understanding progress. | Grouping will take place according to the daily Check for Understanding responses. Tier 1 Students will be group according to quick response and achievement of task. Tier 2 will be group according to minimum gaps in the learning. Tier 3 will work with teacher support and merge out into the other tier as understanding progress. | Grouping will take place according to the daily Check for Understanding responses. Tier 1 Students will be group according to quick response and achievement of task. Tier 2 will be group according to minimum gaps in the learning. Tier 3 will work with teacher support and merge out into the other tier as understanding progress. |
| How will you ensure that all students are responsible for this rigorous thinking? | Cold Calling Wait time Nearpod Activity Kahoot | Cold CallingWait time Nearpod Activity Kahoot | Cold Calling Wait time Nearpod Activity Kahoot | Cold Calling Wait time Nearpod Activity Kahoot | Cold Calling Wait time Nearpod Activity Kahoot |
| **Closure/Assessment (Literacy Based)**What strategy will you use to close the lesson? What assessment will be used to assess the learning? | Lesson summary will recap the days learning.Lesson Quiz (Exit Ticket) | Lesson summary will recap the days learning.Lesson Quiz(Exit Ticket) | Lesson summary will recap the days learning.Lesson Quiz(Exit Ticket) | Lesson summary will recap the days learning.Lesson Quiz(Exit Ticket) | Lesson summary will recap the days learning.Lesson Quiz(Exit Ticket) |
| What mathematical tools, technology tool and/or concrete manipulatives will the teacher and students need to support mathematical understanding? | TI Graphing Calculator | TI Graphing Calculator | TI Graphing Calculator | TI Graphing Calculator | TI Graphing Calculator |
| **SPED/ESL/504:**What modifications are being made to accommodate the students receiving special services? |  Small Group SupportClassroom ProximityAssignment ModificationExtended Time  | Small Group SupportClassroom ProximityAssignment ModificationExtended Time  | Small Group SupportClassroom ProximityAssignment ModificationExtended Time  | Small Group SupportClassroom ProximityAssignment ModificationExtended Time  |  Small Group SupportClassroom ProximityAssignment ModificationExtended Time  |
| **Enrichment Activities:**What will I do with students who understand quicker than others?  | Students will work on theEnrichment Exercise | Students will work on the Enrichment Exercise |  Students will work on the Enrichment Exercise |  Students will work on the Enrichment Exercise | Students will work on the Enrichment Exercise |
| **Homework:**If your lesson contains homework, how will you utilize the work? Will you need to send scaffolding notes home? Is there a strategy you can use to maximize homework? | Complete Additional Practice | Complete Additional Practice | Complete Additional Practice  | Complete Additional Practice | Complete Additional Practice |
| **Lesson Materials:** What additional materials do you need to prepare for this lesson? | Online Textbook Computer | Online Textbook Computer | Online TextbookComputer  | Online Textbook Computer | Online Textbook Computer |
| **Formative Assessment** How will you & your students know if they have successfully met the outcomes? |  80% mastery on Lesson Quiz (4/5 questions correct) | 80% mastery on Lesson Quiz | 80% mastery on Lesson Quiz | 80% mastery on Lesson Quiz | 80% mastery on Lesson Quiz |
| **Summative Assessment** The assessment given to determine at a particular point what students know and can do. | 2-week Unit Assessment |