

MITA International School Syllabus 2019

三田国際学園中学校・高等学校 2019年度 シラバス

Grade Level / Course 学年 / コース	J3 Advanced	Subject Area / Class 教科 / 科目	Math	Class hours 時間数	6 times / week 時間 / 週
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1学期 中間試験 Term 1 Midterm

Name of Unit, Project 単元名	Chapter 1: Calculating with expressions Chapter 2: Square roots	Textbooks / Materials 使用教科書 / 教材	Shin-Chu-Mon for 9 <sup>th</sup> Grade, Gateway to the Future Math 3 / Worksheets, Khan Academy
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Unit Description 単元の概要	Students will be able to: <ul style="list-style-type: none"> <li>• Calculate with expressions</li> <li>• Factor expressions</li> <li>• Expand expressions</li> <li>• Use square roots and perform calculations involving them</li> </ul>
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Unit Standards 本単元の内容と評価規準				Others 備考
察	<b>A3</b> <ul style="list-style-type: none"> <li>• Apply knowledge to solve a real-world problem.</li> <li>• Apply mathematical reasoning.</li> </ul>	<b>B3</b> <ul style="list-style-type: none"> <li>• Reason mathematically.</li> <li>• Model with mathematics.</li> </ul>	<b>C3</b> <ul style="list-style-type: none"> <li>• Create an original problem or model that benefits society.</li> <li>• Construct viable arguments.</li> </ul>	<評価方法> <ul style="list-style-type: none"> <li>• Classwork and group work</li> <li>• Homework and presentations</li> <li>• Chapter Quiz</li> <li>• Exam</li> </ul> <ICT・Creation> <ul style="list-style-type: none"> <li>• Renaissance Adaptive Learning Program</li> <li>• Khan Academy</li> <li>• Quizlet</li> <li>• Google Classroom and Google Apps (Docs, Sheets, Slides)</li> </ul>
好	<b>A2</b> <ul style="list-style-type: none"> <li>• Calculate, expand and factor expressions.</li> <li>• Use square roots and perform calculations involving them.</li> </ul>	<b>B2</b> <ul style="list-style-type: none"> <li>• Connect mathematical concepts.</li> <li>• Critique the reasoning of others.</li> </ul>	<b>C2</b> <ul style="list-style-type: none"> <li>• Efficiently deconstruct problems.</li> <li>• Use tools strategically.</li> </ul>	
知	<b>A1</b> <ul style="list-style-type: none"> <li>• Identify the problem and given information.</li> <li>• Know the meaning of key vocabulary.</li> </ul>	<b>B1</b> <ul style="list-style-type: none"> <li>• Break down a problem into manageable components.</li> <li>• Look for structure.</li> <li>• Identify the logical units of a problem and their connections.</li> </ul>	<b>C1</b> <ul style="list-style-type: none"> <li>• Understand how to use square roots and expansion and factorization of expressions in real world applications.</li> </ul>	
	<b>Recognition</b>	<b>Logical Thinking</b>	<b>Creative Thinking</b>	

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1学期 期末試験 Term 1 Final

Name of Unit, Project 単元名	Chapter 3: Quadratic equations Chapter 4: Functions	Textbooks / Materials 使用教科書 / 教材	Shin-Chu-Mon for 9 <sup>th</sup> Grade, Gateway to the Future Math 3 / Worksheets, Khan Academy
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Unit Description 単元の概要	Students will be able to: <ul style="list-style-type: none"> <li>• Know the solution formula and how to solve quadratic equations</li> <li>• Know the function, changes and uses of the graph of <math>y=ax^2</math></li> </ul>
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Unit Standards 本単元の内容と評価規準			Others 備考
<p><b>察</b></p> <p><b>A3</b></p> <ul style="list-style-type: none"> <li>• Apply knowledge to solve a real-world problem using quadratic equations and functions.</li> <li>• Apply mathematical reasoning.</li> </ul>	<p><b>B3</b></p> <ul style="list-style-type: none"> <li>• Reason mathematically.</li> <li>• Model quadratic equations and functions with mathematics.</li> </ul>	<p><b>C3</b></p> <ul style="list-style-type: none"> <li>• Create an original problem or model using expressions that benefits society.</li> <li>• Construct viable arguments.</li> </ul>	<p>&lt;評価方法&gt;</p> <ul style="list-style-type: none"> <li>• Classwork and group work</li> <li>• Homework and presentations</li> <li>• Chapter Quiz</li> <li>• Exam</li> </ul> <p>&lt;ICT・Creation&gt;</p> <ul style="list-style-type: none"> <li>• Renaissance Adaptive Learning Program</li> <li>• Khan Academy</li> <li>• Quizlet</li> <li>• Google Classroom and Google Apps (Docs, Sheets, Slides)</li> </ul>
<p><b>好</b></p> <p><b>A2</b></p> <ul style="list-style-type: none"> <li>• Calculate, expand and factor expressions.</li> <li>• Use square roots and perform calculations involving them.</li> </ul>	<p><b>B2</b></p> <ul style="list-style-type: none"> <li>• Connect mathematical concepts.</li> <li>• Critique the reasoning of others.</li> </ul>	<p><b>C2</b></p> <ul style="list-style-type: none"> <li>• Efficiently and strategically deconstruct expressions and square roots.</li> </ul>	
<p><b>知</b></p> <p><b>A1</b></p> <ul style="list-style-type: none"> <li>• Identify the problem and given information.</li> <li>• Know the meaning of key vocabulary.</li> </ul>	<p><b>B1</b></p> <ul style="list-style-type: none"> <li>• Break down a problem into manageable components.</li> <li>• Look for structure.</li> <li>• Identify the logical units of a problem and their connections.</li> </ul>	<p><b>C1</b></p> <ul style="list-style-type: none"> <li>• Understand how to use square roots and expansion and factorization of expressions in real world applications.</li> </ul>	
<b>Recognition</b>	<b>Logical Thinking</b>	<b>Creative Thinking</b>	

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2学期 中間試験 Term 2 Midterm

Name of Unit, Project 単元名	Chapter 5: Similar figures Chapter 6: Properties of circles	Textbooks / Materials 使用教科書 / 教材	Shin-Chu-Mon for 9 <sup>th</sup> Grade, Gateway to the Future Math 3 / Worksheets, Khan Academy
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Unit Description 単元の概要	Students will be able to: <ul style="list-style-type: none"> <li>Find similarities between various figures</li> <li>Use inscribed angles and centrals angles</li> <li>Understand ratios of area and ratios of volume</li> <li>Use properties of circles to solve practical applications</li> </ul>
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Unit Standards 本単元の内容と評価規準			Others 備考
楽	<b>A3</b> <ul style="list-style-type: none"> <li>Apply knowledge to solve a real-world problem using similar figures and properties of circles.</li> <li>Apply mathematical reasoning</li> </ul>	<b>B3</b> <ul style="list-style-type: none"> <li>Reason mathematically.</li> <li>Model similar figures and properties of circles with mathematics.</li> </ul>	<評価方法> <ul style="list-style-type: none"> <li>Classwork and group work</li> <li>Homework and presentations</li> <li>Chapter Quiz</li> <li>Exam</li> </ul> <ICT・Creation> <ul style="list-style-type: none"> <li>Renaissance Adaptive Learning Program</li> <li>Khan Academy</li> <li>Quizlet</li> <li>Google Classroom and Google Apps (Docs, Sheets, Slides)</li> </ul>
好	<b>A2</b> <ul style="list-style-type: none"> <li>Use the given information to solve similar figures and properties of circles.</li> <li>Make sense of problems and persevere in solving them. Attend to precision.</li> </ul>	<b>B2</b> <ul style="list-style-type: none"> <li>Connect mathematical concepts for similar figures and properties of circles.</li> <li>Critique the reasoning of others.</li> </ul>	
知	<b>A1</b> <ul style="list-style-type: none"> <li>Identify the problem and given information.</li> <li>Know the meaning of key vocabulary for similar figures and properties of circles.</li> </ul>	<b>B1</b> <ul style="list-style-type: none"> <li>Break down a problem into manageable components.</li> <li>Look for structure.</li> <li>Identify the logical units of similar figures and properties of circles and their connections.</li> </ul>	
	<b>Recognition</b>	<b>Logical Thinking</b>	<b>Creative Thinking</b>

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2学期 期末試験 Term 2 Final

Name of Unit, Project 単元名	Chapter 7: The Pythagorean theorem	Textbooks / Materials 使用教科書 / 教材	Shin-Chu-Mon for 9 <sup>th</sup> Grade, Gateway to the Future Math 3 / Worksheets, Khan Academy
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Unit Description 単元の概要	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>• Prove the Pythagorean Theorem is true</li> <li>• Solve various problems by applying the Pythagorean Theorem</li> <li>• Use the Pythagorean Theorem with plane figures and various solids</li> <li>• Use properties of 3-4-5 right triangles</li> </ul>
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Unit Standards 本単元の内容と評価規準			Others 備考	
楽	<p><b>A3</b></p> <ul style="list-style-type: none"> <li>• Apply knowledge of the Pythagorean Theorem to solve a real-world problem.</li> <li>• Apply mathematical reasoning.</li> </ul>	<p><b>B3</b></p> <ul style="list-style-type: none"> <li>• Reason mathematically.</li> <li>• Model the Pythagorean Theorem with mathematics.</li> </ul>	<p><b>C3</b></p> <ul style="list-style-type: none"> <li>• Create an original problem or model that benefits society using the Pythagorean Theorem.</li> <li>• Construct viable arguments.</li> </ul>	<p>&lt;評価方法&gt;</p> <ul style="list-style-type: none"> <li>• Classwork and group work</li> <li>• Homework and presentations</li> <li>• Chapter Quiz</li> <li>• Exam</li> </ul> <p>&lt;ICT・Creation&gt;</p> <ul style="list-style-type: none"> <li>• Renaissance Adaptive Learning Program</li> <li>• Khan Academy</li> <li>• Quizlet</li> <li>• Google Classroom and Google Apps (Docs, Sheets, Slides)</li> </ul>
好	<p><b>A2</b></p> <ul style="list-style-type: none"> <li>• Use the given information to solve a problem with the Pythagorean Theorem.</li> <li>• Make sense of problems and persevere in solving them. Attend to precision.</li> </ul>	<p><b>B2</b></p> <ul style="list-style-type: none"> <li>• Connect mathematical concepts of the Pythagorean Theorem.</li> <li>• Critique the reasoning of others.</li> </ul>	<p><b>C2</b></p> <ul style="list-style-type: none"> <li>• Efficiently deconstruct problems.</li> <li>• Use tools strategically for the Pythagorean Theorem.</li> </ul>	
知	<p><b>A1</b></p> <ul style="list-style-type: none"> <li>• Identify the problem and given information.</li> <li>• Know the meaning of key vocabulary of the Pythagorean Theorem.</li> </ul>	<p><b>B1</b></p> <ul style="list-style-type: none"> <li>• Break down a problem into manageable components.</li> <li>• Look for structure.</li> <li>• Identify the logical units of a problem using the Pythagorean Theorem and their connections.</li> </ul>	<p><b>C1</b></p> <ul style="list-style-type: none"> <li>• Reason abstractly and quantitatively.</li> <li>• Make use of structure of the Pythagorean Theorem.</li> </ul>	
	<b>Recognition</b>	<b>Logical Thinking</b>	<b>Creative Thinking</b>	

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3学期 期末試験 Term 3 Final

Name of Unit, Project 単元名	Chapter 8: Sample Surveys CCSS for JHS Statistics and Probability	Textbooks / Materials 使用教科書 / 教材	Worksheets, Khan Academy
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Unit Description 単元の概要	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>• Use and apply sample surveys using data and two way tables</li> <li>• Construct and interpret scatter plots to investigate patterns of association between two quantities</li> <li>• Know that straight lines are widely used to model relationships between two quantitative variables</li> <li>• Use the equation of a linear model to solve problems in measurement data, interpreting the slope and intercept</li> </ul>
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Unit Standards 本単元の内容と評価規準				Others 備考
楽	<p><b>A3</b></p> <ul style="list-style-type: none"> <li>• Apply knowledge to solve a real-world problem using statistics and probability.</li> <li>• Apply mathematical reasoning.</li> </ul>	<p><b>B3</b></p> <ul style="list-style-type: none"> <li>• Reason mathematically.</li> <li>• Model with statistics and probability.</li> </ul>	<p><b>C3</b></p> <ul style="list-style-type: none"> <li>• Create an original problem or model that benefits society using statistics and probability.</li> <li>• Construct viable arguments.</li> </ul>	<p>&lt;評価方法&gt;</p> <ul style="list-style-type: none"> <li>• Classwork and group work</li> <li>• Homework and presentations</li> <li>• Chapter Quiz</li> <li>• Exam</li> </ul> <p>&lt;ICT・Creation&gt;</p> <ul style="list-style-type: none"> <li>• Renaissance Adaptive Learning Program</li> <li>• Khan Academy</li> <li>• Quizlet</li> <li>• Google Classroom and Google Apps (Docs, Sheets, Slides)</li> </ul>
好	<p><b>A2</b></p> <ul style="list-style-type: none"> <li>• Use the given information to solve a problem using statistics and probability.</li> <li>• Make sense of data and persevere in solving them.</li> <li>• Attend to precision.</li> </ul>	<p><b>B2</b></p> <ul style="list-style-type: none"> <li>• Connect mathematical concepts for statistics and probability.</li> <li>• Critique the reasoning of others.</li> </ul>	<p><b>C2</b></p> <ul style="list-style-type: none"> <li>• Efficiently deconstruct problems with statistics and probability.</li> <li>• Use tools strategically.</li> </ul>	
知	<p><b>A1</b></p> <ul style="list-style-type: none"> <li>• Identify the problem and given information.</li> <li>• Know the meaning of key vocabulary for statistics and probability.</li> </ul>	<p><b>B1</b></p> <ul style="list-style-type: none"> <li>• Break down a problem into manageable components.</li> <li>• Look for structure.</li> <li>• Identify the logical units of a statistics and probability problem and their connections.</li> </ul>	<p><b>C1</b></p> <ul style="list-style-type: none"> <li>• Reason abstractly and quantitatively.</li> <li>• Make use of structures of statistics and probability.</li> </ul>	
	<b>Recognition</b>	<b>Logical Thinking</b>	<b>Creative Thinking</b>	