

PHYSICS GRADE 10

CHAPTER ONE LINEAR MOTION

Introduction

Study of motion is divided into two;

1. Kinematics
2. Dynamics

In kinematics forces causing motion are disregarded while dynamics deals with motion of objects and the forces causing them.

I. Displacement

Distance moved by a body in a specified direction is called displacement. It is denoted by letter 's' and has both magnitude and direction. Distance is the movement from one point to another. The SI unit for displacement is the metre (m).

II. Speed

This is the distance covered per unit time.

Speed = distance covered / time taken. Distance is a scalar quantity since it has magnitude only. The SI unit for speed is metres per second (m/s or ms^{-1})

Average speed = total distance covered / total time taken

Other units for speed used are Km/h.

Examples

1. A body covers a distance of 10m in 4 seconds. It rests for 10 seconds and finally covers a distance of 50m in 60 seconds. Calculate the average speed.

Solution

Total distance covered = $10 + 50 = 100\text{m}$

Total time taken = $4 + 10 + 6 = 20$ seconds

Therefore average speed = $100 / 20 = 5\text{m/s}$

2. Calculate the distance in metres covered by a body moving with a uniform speed of 180 km/h in 30 seconds.

Solution

Distance covered = speed * time
 $= 180 * 1000 / 60 * 60 = 50\text{m/s}$
 $= 50 * 30$
 $= 1,500\text{m}$

3. Calculate the time in seconds taken a by body moving with a uniform speed of 360km/h to cover a distance of 3,000 km?

Solution

Speed: $360 \text{ km/h} = 360 * 1000 / 60 * 60 = 100\text{m/s}$

Time = distance / speed
 $3000 * 1000 / 100$
 $= 30,000 \text{ seconds.}$

III. Velocity

This is the change of displacement per unit time. It is a vector quantity.

Velocity = change in displacement / total time taken

The SI units for velocity are m/s

Examples

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**Geological Survey, Interior
Department, Mines Bureau**



2014 November Grade10 Paper1 Physical Science:

ICTES 2018 Robbi Rahim, Kadek Suranata, Ifdil Ifdil, Itsar Bolo Rangka, 2019-03-13 The technical program of The First ICTES 2018 consisted of 114 full papers. Aside from the high quality technical paper presentations we also held workshop and clinic manuscript that was carried out before the main track aims to strengthen the ability to write scientific publications. Coordination with the steering chairs Dr Kadek Suranata S Pd M Pd Kons and the members of organizing committee is essential for the success of the conference. We sincerely appreciate all the Advisory Boards for the constant support and guidance. It was also a great pleasure to work with such an excellent organizing committee team for their hard work in organizing and supporting the conference. In particular the Scientific Committee led by Cand Dr Robbi Rahim M Kom have completed the peer review process of technical papers and made a high quality technical program. We are also grateful to Students Conference chairs were leading by Ida Ayu Made Diah Paramiswari for their support and all the authors who submitted their papers to the First ICTES 2018. We strongly believe that ICTES conference provides a good forum for all academicians, researchers and practitioners to discuss all Educational science and technology aspects that are relevant to issues and challenge for sustainability in the 4th industrial revolution. We also expect that the future ICTES conference will be as successful and stimulating as indicated by the contributions presented in this volume. *The State of the Art in Student Engagement* Carl Senior, 2015-07-10 There is an extensive literature conducted from a range of theoretical perspectives and methodologies on the role of groups and student learning in higher education. However here the concept of the group is heavily contested at a theoretical level but within higher education practice characterizing the group has tended to be clear cut. Groups of students are often formed within the parameters of specific educational programs to address explicitly defined learning objectives. These groups are often small scale and achieve tasks through cooperative or collaborative learning. Cooperative learning involves students dividing roles and responsibilities between group members so learning becomes an independent process and outcome. On the other hand collaborative learning involves students working together by developing shared meanings and knowledge to solve a task or problem. From this perspective learning is conceptualized as both a social process and individual outcome. That is collaborative learning may facilitate individual student conceptual understanding and hence lead to higher academic achievement. The empirical evidence is encouraging as has been shown that students working collaboratively tend to achieve higher grades than students working independently. However the above perspectives on student engagement assume that groups are formed within the confines of formal learning environments. e.g lecture theaters involve students on the same degree program have the explicit function of achieving a learning task and disband once this has been achieved. However students may also use existing social networks such as friendship groups as a mechanism for learning which may occur outside of formal learning environments. There is an extensive literature on the role and benefits of friendship groups on student learning within primary and secondary education.

but there is a distinct lack of research within higher education This ebook is innovative and ambitious and will highlight and consolidate the current understanding of the role that student based engagement behaviors may serve in effective pedagogy A unique aspect of this research topic will be the fact that scholars will also be welcome to submit articles that describe the efficacy of the full range of approaches that have been employed to facilitate student engagement across the sector

Proceedings of the 2014 Energy Materials Conference The Minerals, Metals & Materials Society (TMS), 2015-04-15 This DVD contains a collection of papers presented at EnergyMaterials 2014 a conference organized jointly by The Chinese Society for Metals CSM and The Minerals Metals Materials Society TMS and held November 4-6 2014 in Xi'an Shaanxi Province China With the rapid growth of the world's energy production and consumption the important role of energy materials has achieved worldwide acknowledgement Material producers and consumers constantly seek the possibility of increasing strength improving fabrication and service performance simplifying processes and reducing costs Energy Materials 2014 has provided a forum for academics researchers and engineers around the world to exchange state of the art development and information on issues related to energy materials The papers on the DVD are organized around the following topics Materials for Coal Based Systems Materials for Gas Turbine Systems Materials for Nuclear Systems Materials for Oil and Gas Materials for Pressure Vessels

Teaching Climate Change to Children Rebecca Woodard, Kristine M. Schutz, 2024 Teaching Climate Change to Children describes the journey of two literacy researchers to learn about climate change and support relevant literacy pedagogy for young children pre-K-6 The authors argue that climate change and social justice are inextricable from each other that children in the younger grades are capable of learning about climate change and that reading writing and language study is well suited to this work Three anchoring themes are offered to support literacy climate pedagogy interconnectivity relationality and action with rich classroom examples and different entry points to engage with these themes either by starting small or going big The text includes chapters on the importance of taking an emotionally affirming stance and on the potential of incorporating arts based methods With love for the Earth and one another at its core this accessible book takes a broad view of what it means to cultivate sustainable futures for our planet for teachers and for children in today's schools Book Features A unique focus on teaching about climate change to young children as opposed to adolescents Insights drawn from a yearlong teacher inquiry group with classroom teachers and from literacy methods courses with preservice teachers Explicit attention to the importance of humanizing and care based practices in literacy climate pedagogy Classroom examples collected across four urban public schools where teachers used the activities and resources discussed in the book User friendly textboxes with suggestions and questions to guide discussion reflection and action

Minerals Yearbook Geological Survey, Interior Department, Mines Bureau, 2019-02-15 This volume covering metals and minerals contains chapters on approximately 90 commodities In addition this volume has chapters on mining and quarrying trends and on statistical surveying methods used by Minerals Information plus a statistical summary PHealth

2015 B. Blobel, M. Lindén, M.U. Ahmed, 2015-05-26 Smart mobile systems smart textiles smart implants and sensor controlled medical devices are among the recent developments which have become important enablers for telemedicine and next generation health services Social media and gamification have added yet another dimension to Personalized Health pHealth This book presents the proceedings of pHealth 2015 the 12th International Conference on Wearable Micro and Nano Technologies for Personalized Health held in Västerås Sweden in June 2015 The conference addressed mobile technologies knowledge driven applications and computer assisted decision support as well as apps designed to support the elderly and those with chronic conditions in their daily lives The 23 conference papers three keynotes and two specially invited contributions included here address the fundamental scientific and methodological challenges of adaptive autonomous and intelligent pHealth approaches Participants at this truly interdisciplinary conference included representatives from all relevant stakeholder communities and the topics covered will be of interest to all those whose work involves improving the quality of medical services optimizing industrial competitiveness and managing healthcare costs The Extinction of Experience Christine Rosen, 2024-09-10 An Esquire Best Book of 2024 An extremely important book Jonathan Haidt author of The Anxious Generation A reflective original invitation to recover and cultivate the human experiences that have atrophied in our virtual world We embraced the mediated life from Facetime and Venmo to meme culture and the Metaverse because these technologies offer novelty and convenience But they also transform our sense of self and warp the boundaries between virtual and real What are the costs Who are we in a disembodied world In The Extinction of Experience Christine Rosen investigates the cultural and emotional shifts that accompany our embrace of technology In warm philosophical prose Rosen reveals key human experiences at risk of going extinct including face to face communication sense of place authentic emotion and even boredom Considering cultural trends like TikTok challenges and mukbang and politically unsettling phenomena like sociometric trackers and online conspiracy culture Rosen exposes an unprecedented shift in the human condition one that habituates us to alienation and control To recover our humanity and come back to the real world we must reclaim serendipity community patience and risk Minerals Yearbook Geological Survey, Interior Department, Mines Bureau, 2019-01-31 This volume covering metals and minerals contains chapters on approximately 90 commodities In addition this volume has chapters on mining and quarrying trends and on statistical surveying methods used by Minerals Information plus a statistical summary **Organization and Administration of Physical Education** Jayne D. Greenberg, Judy L. LoBianco, 2025-03-25 Organization and Administration of Physical Education Second Edition is fully updated with the revised SHAPE America National Physical Education Standards and culturally responsive teaching practices PE administrators will learn solid foundational theory and practices to implement successful programs **2025-26 UPPSC LT Grade Computer Science Solved Papers** YCT Expert Team , 2025 26 UPPSC LT Grade Computer Science Solved Papers 624 995 This book contains the previous year solved papers **An Open Book: What and How Young Children Learn From Picture and Story**

Books Jessica S. Horst, Carmel Houston-Price, 2016-01-21 Looking at and listening to picture and story books is a ubiquitous activity frequently enjoyed by many young children and their parents Well before children can read for themselves they are able to learn from books Looking at and listening to books increases children s general knowledge understanding about the world and promotes language acquisition This collection of papers demonstrates the breadth of information pre reading children learn from books and increases our understanding of the social and cognitive mechanisms that support this learning Our hope is that this Research Topic eBook will be useful for researchers as well as educational practitioners and parents who are interested in optimizing children s learning Energy, Environment and Green Building Materials Ai

Sheng, 2015-05-29 This proceedings volume contains selected papers presented at the 2014 International Conference on Energy Environment and Green Building Materials held in Guilin Guangxi China Contributions cover the latest developments and advances in the field of Energy Environment and Green Building Materials Advances in Civil Engineering and Building Materials IV Shuenn-Yih Chang, Suad Khalid Al Bahar, Adel Abdulmajeed M. Husain, Jingying Zhao, 2015-05-06

Covering a wide range of topics Advances in Civil Engineering and Building Materials IV presents the latest developments in Structural Engineering Road Bridge Engineering Geotechnical Engineering Architecture Urban Planning Transportation Engineering Hydraulic Engineering Engineering Management Computational Mechanics Constr Bituminous Mixtures and Pavements VII A.F. Nikolaidis, E. Manthos, 2019-05-24 Highway engineers are facing the challenge not only to design and construct sustainable and safe pavements properly and economically This implies a thorough understanding of materials behaviour their appropriate use in the continuously changing environment and implementation of constantly improved technologies and methodologies Bituminous Mixtures and Pavements VII contains more than 100 contributions that were presented at the 7th International Conference Bituminous Mixtures and Pavements 7ICONFBMP Thessaloniki Greece 12-14 June 2019 The papers cover a wide range of topics Bituminous binders Aggregates unbound layers and subgrade Bituminous mixtures Hot Warm and Cold Pavements Design Construction Maintenance Sustainability Energy and environment consideration Pavement management Pavement recycling Geosynthetics Pavement assessment surface characteristics and safety Posters Bituminous Mixtures and Pavements VII reflects recent advances in highway materials technology and pavement engineering and will be of interest to academics and professionals interested or involved in these areas

Outdoor Learning in Higher Education Wendy Garnham, Paolo Oprandi, 2024-08-15 Outdoor Learning in Higher Education is essential reading for educational developers and academic teachers of all disciplines interested in the theory behind and benefits of learning outdoors Filled with practical case studies and backed by recent research it provides educators with the tools needed to create an effective yet inclusive learning experience for their students beyond the lecture hall or seminar room In chapters which offer analysis discussion of current debates and advice for good practice the book is structured around five key themes Theoretical perspectives and research supporting outdoor learning Health and wellbeing

benefits for learners and educators Tools and techniques for teaching outdoors including new technology Examples of effective fieldwork Crossing educational borders and implementing sustainability and the natural world into the curriculum This key book covers issues which are relevant across all disciplines in higher education including experiential learning sustainability diversity and inclusion and incorporating new technology Outdoor Learning in Higher Education develops perspectives on these and other themes while encouraging the creation of inspiring and effective learning environments

Growth, Maturation, Physical Activity, and Sport Robert M. Malina, 2025-04-07 Growth Maturation Physical Activity and Sport Third Edition is uniquely focused on the biological growth and maturation of children and adolescents in relation to physical performance both physical activity and sport Written by a true legend in the field Robert M Malina this latest edition features new content exploring the characteristics of youth sport participants associated benefits and risks and efforts aimed at talent development This essential resource guides readers through the complexities of human growth and maturation with the latest research findings and over 350 charts and illustrations that visually support the material The content has been expanded and modified to incorporate recent advances in technology and science such as progress in the study of the human genome deeper understanding of hormone regulation during growth and advancements in body composition assessment Growth Maturation Physical Activity and Sport Third Edition uses a five part structure enabling readers to gain a basic understanding of growth and maturation and then build upon that foundation The first two parts focus on age and sex associated variations in body composition and explore the concept of biological maturation Part III discusses primary factors that interact to regulate the process of growth and maturation hormones genes nutrients and energy and social factors Part IV considers motor development and performance from infancy through adolescence Part V has been added to provide an overview of youth sports participation statistics and motivation for participation as well as a review of the growth and maturity characteristics of male and female participants in a variety of team and individual sports Growth Maturation Physical Activity and Sport Third Edition is the only text to focus on the biological growth and maturation process of children and adolescents as it relates to physical activity and performance Readers will complete the text with an appreciation for the field and its influence in physical education kinesiology and the sport sciences **Complete Book of Colleges, 2005**

Edition Princeton Review (Firm), 2004-07-20 Up to date information on 1 780 colleges and universities **Efficacy and Mechanism of Herbal Medicines and Their Functional Compounds in Preventing and Treating Cardiovascular Diseases and Cardiovascular Disease Risk Factors** Qing Yong He, Yu-Qing Zhang, Jie Wang, Jian Zhang, Kuo

Gao, Zhongfeng Li, 2023-10-13 **Airships** Iver P. Cooper, 2025-05-16 Many people may know about the blazing crash of the Hindenburg in 1937 but are possibly unaware that it had made 62 flights before its final journey including one transporting author Leslie Charteris creator of The Saint The disaster however did not end the airship era blimps escorted convoys during World War II and were a part of air defense systems in the 1950s and 1960s Airships still fly today and new models are in the

construction phase This book examines this branch of aviation history delving into the science and engineering of airships and their design flaws weather difficulties and operational errors The chapters focus on function lift propulsion materials ground handling and so forth The book concludes with speculations about future airship designs and missions School Achievement and Failure: Prevention and Intervention Strategies Edgar Galindo, Adelinda Araujo Candeias, Małgorzata Lipowska, Óscar Conceição De Sousa, Marcus Stueck, 2022-11-25

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