4-14 · 4-5 과학은 어떻게 작동하는가
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2024학년도 6월 모평 38번

2023년 6월 시행 · 한국교육과정평가원

As particular practices are repeated over time and become more widely shared, the values that they embody are reinforced and reproduced and we speak of them as becoming 'institutionalized'. In some cases, this institutionalization has a formal face to it, with rules and protocols written down, and specialized roles created to ensure that procedures are followed correctly. The main institutions of state—parliament, courts, police and so on—along with certain of the professions, exhibit this formal character. Other social institutions, perhaps the majority, are not like this; science is an example. Although scientists are trained in the substantive content of their discipline, they are not formally instructed in 'how to be a good scientist'. Instead, much like the young child learning how to play 'nicely', the apprentice scientist gains his or her understanding of the moral values inherent in the role _____ —socialization. We think that these values, along with the values that inform many of the professions, are under threat, just as the value of the professions themselves is under threat.

1. 빈칸 추론 윗글의 빈칸에 들어갈 말로 가장 적절한 것은?

① through formal written protocols
② by absorption from their colleagues
③ by reading the laws of the state
④ from courses on scientific ethics
⑤ through competition with other labs

2. 요약문 완성 윗글의 내용을 한 문장으로 요약하고자 한다. 빈칸 (A), (B)에 들어갈 말로 가장 적절한 것은?

While some institutions maintain their values through (A) _____ rules and roles, science passes on its moral values mainly through (B) _____.

	(A)		(B)
①	formal	……	legislation
②	informal	……	socialization
③	flexible	……	examinations
④	written	……	competition
⑤	formal	……	socialization

2024학년도 수능 38번

2023년 11월 시행 · 대학수학능력시험

Science is sometimes described as a winner-take-all contest, meaning that there are no rewards for being second or third. This is an ① balanced view of the nature of scientific contests. Even those who describe scientific contests in such a way note that it is a somewhat ② inaccurate description, given that replication and verification have social ③ value and are common in science. It is also inaccurate to the extent that it suggests that only a ④ handful of contests exist. Yes, some contests are seen as world class, such as identification of the Higgs particle or the development of high temperature superconductors. But many other contests have ⑤ multiple parts, and the number of such contests may be increasing. By way of example, for many years it was thought that there would be "one" cure for cancer, but it is now realized that cancer takes multiple forms and that multiple approaches are needed to provide a cure. There won't be one winner—there will be many.

1. 어휘 윗글의 밑줄 친 부분 중, 문맥상 낱말의 쓰임이 적절하지 않은 것은?

① ② ③ ④ ⑤

2. 제목 윗글의 제목으로 가장 적절한 것은?

① The Race for the Higgs Particle
② Why Second Place Means Nothing in Science
③ One Cure for All Cancers
④ Not One Winner but Many: Rethinking Scientific Contests
⑤ Replication: A Waste of Scientific Time

2024학년도 수능 41~42번

2023년 11월 시행 · 대학수학능력시험

One way to avoid contributing to overhyping a story would be to say nothing. However, that is not a realistic option for scientists who feel a strong sense of responsibility to inform the public and policymakers and/or to offer suggestions. Speaking with members of the media has advantages in getting a message out and perhaps receiving favorable recognition, but it runs the risk of misinterpretations, the need for repeated clarifications, and entanglement in never-ending controversy. Hence, the decision of whether to speak with the media tends to be _____. Decades ago, it was unusual for Earth scientists to have results that were of interest to the media, and consequently few media contacts were expected or encouraged. In the 1970s, the few scientists who spoke frequently with the media were often criticized by their fellow scientists for having done so. The situation now is quite different, as many scientists feel a responsibility to speak out because of the importance of global warming and related issues, and many reporters share these feelings. In addition, many scientists are finding that they enjoy the media attention and the public recognition that comes with it. At the same time, other scientists continue to resist speaking with reporters, thereby preserving more time for their science and avoiding the risk of being misquoted and the other unpleasantries associated with media coverage.

1. 빈칸 추론 윗글의 빈칸에 들어갈 말로 가장 적절한 것은?

① strictly controlled by universities
② the same for all scientists
③ highly individualized
④ made by reporters
⑤ discouraged by the public

2. 내용 불일치 윗글의 내용과 일치하지 않는 것은?

① 수십 년 전에는 지구 과학자의 연구가 언론의 관심을 끄는 일이 드물었다.
② 1970년대에 언론과 자주 접촉한 과학자들은 동료들에게 칭찬을 받았다.
③ 지구 온난화의 중요성 때문에 많은 과학자가 발언할 책임을 느낀다.
④ 일부 과학자는 언론의 관심과 대중의 인정을 즐긴다.
⑤ 언론을 피하는 과학자는 연구 시간을 더 확보할 수 있다.

2027학년도 수능 41~42번

2026년 11월 시행 · 대학수학능력시험

Since we know that life exists on Earth, we're most likely to find it and recognize it on other worlds that resemble Earth. This is the logic of the search for Earth-like planets in other systems, and the terracentric search for life on those worlds. It fuels the drive to "follow the water." It forms the basis for seeking planets where liquid water and protective atmospheres exist, preferably on medium-sized, rocky planets with stable near-circular orbits with daily and seasonal cycles that are not too extreme. It underpins the concept of the "stellar habitable zone," which assumes that life is restricted to those planets at just the right distance from their central star for Earth-like conditions to exist. It fits perfectly with the search for life in our own image. The alternative logic is one that starts from a different assumption—that life on Earth is not representative necessarily of life elsewhere, and that therefore the conditions that led to and sustain life on Earth need not be viewed as limitations. A nuanced version of this alternative is that, in fact, the life we see around us as humans is not even typical of the vast majority of biomass on Earth. The unseen microbial world beneath our feet, in our oceans, and to a considerable depth within the crust of our planet is _____, including our own, with the larger organisms that catch our eye simply being the exceptions that command our attention.

1. 빈칸 추론 윗글의 빈칸에 들어갈 말로 가장 적절한 것은?

① the rule for life on most worlds
② a rare exception on Earth
③ limited to the oceans
④ less important than large organisms
⑤ impossible to find elsewhere

2. 요지 윗글의 요지로 가장 적절한 것은?

① 생명은 액체 상태의 물이 있는 곳에서만 존재할 수 있다.
② 외계 생명 탐사는 거대 생물에 집중해야 한다.
③ 항성의 생명 가능 지대 개념은 완벽히 증명되었다.
④ 지구형 행성에서만 생명을 찾는 관점을 넘어, 지구 생명이 다른 곳의 전형이 아닐 수 있다는 관점이 필요하다.
⑤ 미생물은 지구 생물량에서 차지하는 비중이 작다.

2025학년도 9월 모평 23번

2024년 9월 시행 · 한국교육과정평가원

It is much more natural to be surprised by ① unusual phenomena like eclipses than ordinary phenomena like falling bodies or the succession of night into day and day into night. Many cultures invented gods to explain these eclipses that shocked, frightened, or surprised them; but very few imagined a god of falling bodies—to which they were so ② unfamiliar that they did not even notice them. But the reason for eclipses is ultimately the ③ same as that of the succession of night and day: the movement of celestial bodies, which itself is based on the Newtonian law of attraction and how it explains why things fall when we let them go. For the physicist, understanding the ④ ordinary, the habitual, and the frequent thus allows us to account for the frightening and the singular. As such, it was thus necessary to ask "Why do things fall?" and to have Newton's response to understand a broad range of much more ⑤ bizarre phenomena occurring at every level of the universe.

1. 어휘 윗글의 밑줄 친 부분 중, 문맥상 낱말의 쓰임이 적절하지 않은 것은?

① ② ③ ④ ⑤

2. 제목 윗글의 제목으로 가장 적절한 것은?

① Gods of the Eclipse
② Why Ordinary Things Are Not Worth Studying
③ From Falling Objects to Eclipses: Explaining the Strange Through the Ordinary
④ Night and Day: A Cultural History
⑤ Newton's Mistakes

2026학년도 6월 모평 37번

2025년 6월 시행 · 한국교육과정평가원

A good example of chaos is the magnetic pendulum sold as an executive toy. It has four magnets ① arranging in a square at the base and a pendulum that swings back and forth between them. Release the pendulum and note the magnets that it visits, and in what order. If the pendulum is ② released from the same position a second time, the pattern of movement may at first be the same but soon it will become completely different. In fact, the pattern of its movement is chaotic. No matter how much care is ③ taken to start the pendulum in the same position, it will visit an entirely different set of points on the two occasions. Chaotic systems are ④ generated by iteration, though not all iteration leads to chaos. In order to produce chaos, the iteration has to be within what is called a nonlinear system. Nor are all nonlinear systems chaotic: to become so they need to be pushed beyond a certain point, called a bifurcation. Before that point is ⑤ reached they may behave in a quite orderly fashion.

1. 어법 윗글의 밑줄 친 부분 중, 어법상 틀린 것은?

① ② ③ ④ ⑤

2. 주제 윗글의 주제로 가장 적절한 것은?

① how to design executive toys
② how chaos arises in nonlinear systems, shown by a magnetic pendulum
③ why all iteration produces chaos
④ the strength of magnetic fields
⑤ orderly behavior of linear systems

정답 및 해설

4-14 **1.**② **2.**⑤ · 4-15 **1.**① **2.**④ · 4-16 **1.**③ **2.**② · 4-17 **1.**① **2.**④ · 4-18 **1.**② **2.**③ · 4-19 **1.**① **2.**②

4-14 · 2024학년도 6월 모평 38번

1. ② 과학자는 '좋은 과학자가 되는 법'을 공식적으로 배우지 않고, 아이가 사이좋게 노는 법을 배우듯 동료들로부터 흡수하며(사회화) 배운다.

2. ⑤ 국가 기관과 일부 전문직은 규칙과 역할이 문서화된 공식적(formal) 제도화를 보이지만, 과학은 동료에게서 흡수하는 사회화(socialization)로 가치를 전한다.

4-15 · 2024학년도 수능 38번

1. ① 과학을 '승자 독식' 경쟁으로 보는 것은 '극단적인' 견해이며, 바로 뒤에서 이를 부정확하다고 비판한다. ① balanced → extreme.

2. ④ 과학 경쟁은 승자 독식이 아니며, 여러 부분으로 이루어진 경쟁에서 많은 승자가 나온다는 글이다. ②는 글이 부정한 견해다.

4-16 · 2024학년도 수능 41~42번

1. ③ 언론 접촉에는 장점과 위험이 함께 있으므로, 언론과 이야기할지는 과학자 개인에 따라 매우 다르게 결정된다.

2. ② 1970년대에 언론과 자주 접촉한 소수의 과학자들은 동료들에게 '비판받았다'.

4-17 · 2027학년도 수능 41~42번

1. ① 우리 눈에 띄는 큰 생물은 오히려 예외이고, 보이지 않는 미생물 세계가 지구를 포함한 대부분의 세계에서 생명의 일반적 형태라는 것이다.

2. ④ '우리 모습을 닮은 생명'을 찾는 지구 중심 논리와 달리, 지구 생명(특히 큰 생물)이 전형이 아닐 수 있다는 대안적 논리를 제시한다.

4-18 · 2025학년도 9월 모평 23번

1. ② 떨어지는 물체에는 너무 '익숙해서' 알아차리지도 못했기에 그것을 위한 신은 거의 없었다. ② unfamiliar → accustomed.

2. ③ 일식 같은 기이한 현상도 물체가 떨어지는 평범한 현상과 같은 원리로 설명되며, 평범한 것을 이해하는 것이 특이한 것을 설명하게 한다는 글이다.

4-19 · 2026학년도 6월 모평 37번

1. ① four magnets를 수식하며 '배열된'이라는 수동의 의미이므로 과거분사 arranged가 알맞다. ① arranging → arranged.

2. ② 자석 진자의 예로 혼돈을 보여 주고, 혼돈이 반복·비선형·분기점을 거쳐 생긴다고 설명한다. ③은 글이 부정한 내용이다.