



GSサイエンス英語

－教材例－



◇本教材（例）について

本教材は、文部科学省スーパーサイエンスハイスクール（SSH）事業研究指定のもと京都府立桃山高等学校独自の設定科目「GS サイエンス英語」の教材として開発されたものです（平成27年度 第2期指定 2年次）。

「GS サイエンス英語」では、「英語によるサイエンス（理科）の内容を英語のまま理解する能力」の育成方法の開発を目標としております。その目標の達成のために、英語による理科の授業やサイエンスに関する英語リスニング、サイエンスに関する英作文や英文読解など、サイエンスを題材にした英語学習が有効であると考えております。特に、「サイエンスに関する英語リスニング」に注目し、リスニング能力を育成するための教材を開発しました。

本教材は次のような特徴があります。

- （１）ネット上に無料で公開されている映像を活用している
- （２）様々な英語を題材にしている
- （３）生徒の主体的かつ協働的な学びを重視している
- （４）理科の教員が主導で開発したものである
- （５）英語科と理科（等）の教員によるチームティーチングを想定している
- （６）本教材をもとに、各学校独自の教材へと改良できる

ネット上には、サイエンスに関する英語映像が無料で大量に公開されています。国籍が異なる方によるもの、バックグラウンドの異なる方によるもの、1分程度の長さのものから数時間に及ぶものなど、多種多様です。各校（各生徒）の状況に応じて、適した題材を探し出すことができます。それらを活用しながら、生徒の主体的かつ協働的な学びができるような展開を提案しております。さらに、本教材の開発の主体が理科の教員であることは、特筆すべきことであると考えております。英語はあくまでもツールであり、核はサイエンスであるからです。しかしながら、英語科の教員と同時に教えることも想定しています。別に履修しているであろう”英語科”の各科目との連続性も大切だからです。つまり、英語科と理科の教員が揃って指導にあたるのが大切なのです。両者が、それぞれの長所を発揮することで、目標達成に近づくことができると考えています。以上を踏まえていただいた上で、単に教材を改良するだけではなく、本科目の”型”自体を活用・改良することで、各校独自の「サイエンス英語」へと展開することができます。

◇本教材の使用例

1 想定

- (1) 一教材あたり、50分間の授業で2～3回です。
- (2) 高等学校2年生を想定していますが、1年生や3年生でも、使用可能です。
- (3) 英語科教員と理科教員のチームティーチングです。
- (4) 音声動画を使用します。

2 指導概要

(1) 1回目 (1時間目)

- ①本日の内容について説明と共有、キーワード紹介 【5分】
- ②映像のリスニング (2回～3回) とグループ活動、共有 【25～30分】
- ③リスニング (穴埋め) (1～2回) とグループ活動 【15～20分】

(2) 2回目 (2時間目)

- ①リスニング (穴埋め) (1～2回) とグループ活動、解答 【10～15分】
- ②再度リスニング 【5～10分】
- ③聞き取りテストと採点 【5～10分】
- ④日本語訳作成と要約作成 (宿題としても良い) 【25～30分】

(3) 3回目 (3時間目) (必要に応じて)

- ①Dictation (個人活動)
- ②Shadowing

3 教員の役割

英語科教員は主に、英語面に関する総合的な指導を行う。理科教員は主に、教材内容の理科的な面について解説や指導を行う。

4 評価

一教材に対して、4つの観点それぞれを3段階 (A、B、C) で評価する。最終的な合計点に基づいて、評定に換算する。

A: 「十分満足できる (3点)」、B: 「おおむね満足できる (2点)」、C: 「努力を要する (1点)」

- (1) 「関心・意欲・態度」: 受講の様子、提出物の内容
- (2) 「思考・判断・表現」: 受講の様子、提出物の内容
- (3) 「技能」: 提出物の内容、パフォーマンステスト
- (4) 「知識・理解」: 提出物の内容、教材ごとに実施するテスト

◇本教材の英語原稿について

ネット上の実際の音声動画を活用しているため、以下の点をお許しください。

- (1) 言い直しや同じ言葉の繰り返しについては、不正確な場合があります。
- (2) 固有名詞や特殊な用語については、不正確な場合があります。
- (3) 音声動画の“音”を尊重したため、英語の文法的に正しくない部分や表現がありえます。
- (4) 音声動画の“音”を尊重したため、英語の文法的には正しくても、不自然な表現がありえます。
- (5) 本校教員が実際に聞いて文字にしているため、誤っている所もありえます。
(コンピューターの音声聞き取り機能の活用やネイティブスピーカーのチェックを受けております。)

◇本教材の英文の著作権について

ここに例示しているものについては、英文の内容の使用について、映像制作者への許諾申請ができております。しかしながら、本教材例の使用に関しては、非営利目的かつ教育目的のみに限定しております。使用に際しては、御配慮をお願いします。

御使用の際には、本校まで御一報いただければ幸いです。同時に、内容等について、感想や改良点などお伺いできれば幸いです。

世界トップレベル研究拠点プログラム (WPI)
東京大学国際高等研究所
カブリ数物連携宇宙研究機構 (Kavli IPMU)



東京大学国際高等研究所カブリ数物連携宇宙研究機構 <http://www.ipmu.jp/ja/mission/from-director>

本教材は、京都府立桃山高等学校のオリジナル作成物です。英文は、「世界トップレベル研究拠点プログラム (WPI) に採択された東京大学 (Kavli IPMU) のプロジェクトを紹介する映像」をもとに、本校教員が文字化したものです。映像作成元である大阪大学免疫学フロンティア研究センター (iFReC) と日本学術振興会 (JSPS) から、映像および文字化した英文の使用許可を得ております。また、東京大学国際高等研究所カブリ数物連携宇宙機構 (Kavli IPMU) および同機構長の村山斉先生からも使用許可を得ております。

音声動画 <https://www.youtube.com/watch?v=vfr1qpAjj5M>

東京大学国際高等研究所カブリ数物連携宇宙研究機構（Kavli IPMU）

No.1

月 日 年 組 番 氏名

- 1 今回の内容は、世界トップレベル研究拠点プログラム（WPI）に採択された東京大学（Kavli IPMU）のプロジェクトを紹介する映像です。実際に映像を見る前に、どのような内容であるか共有しておきましょう。

課題

「東京大学」、「宇宙の研究」、「村山斉さん」について、どのようなことを知っていますか。「知っていること・思いつくこと」など、できるだけたくさん書いてください。

Key words and phrases

月 日 年 組 番 氏名

- 2 世界トップレベル研究拠点プログラム (WPI) に採択された東京大学 (Kavli IPMU) のプロジェクトを紹介する映像です。複数の研究者の英語 (ナレーションも含む) をしっかり聞き取ってください。後で、内容について質問しますので、聞き取れた内容や単語・文章、印象に残っていることなど、メモをとってください。
(映像の長さは、約5分です。)

⇒ どれくらい内容が理解できたと思いますか (自己判断)

1回目終了後 () %

2回目終了後 () %

3回目終了後 () %

聞き取れた内容 (単語・文章) や印象に残ったことをメモしてください。

月 日 年 組 番 氏名

- 3 世界トップレベル研究拠点プログラム (WPI) に採択された東京大学 (Kavli IPMU) のプロジェクトを紹介する映像を再度聞きます。以下に原稿を示します。空欄にあてはまる英単語もしくは英文を記入してください。

Toshio KUROKI, Program Director of WPI

- ①The Japanese government initiated WPI program in (), which aims to establish internationally opened and globally visible institute in Japan.
- ②We have four ambitious () or missions.
- ③Number one is to achieve World top-class Science.
- ④Number two is creation of breakthrough by fusion of existing fields of Science.
- ⑤Number three is internationalization.
- ⑥Number four is () of Science systems or cultures as well as administration systems.
- ⑦We hope the WPI program further stimulate Science in this country. Thank you very much.

Narrator

- ⑧The WPI program represents the pinnacle of Japanese Science, having achieved outstanding results in just the first five years since its inception.
- ⑨The six centers in the programs are AIMR in Sendai, MANA in Tsukuba, IPMU in Tokyo, iCeMS in (), IFRc in Osaka, and I2CNER in Fukuoka.
- ⑩IPMU, located on the Kashiwa Campus of the University of Tokyo, () to address the deepest mysteries of the Universe using the tools of physics and mathematics.
- ⑪Over 200 researchers are currently () to integrate the forefront knowledge of these two fields.

Hitoshi MURAYAMA, IPMU Director, The University of Tokyo.

⑫Hello, my name is Hitoshi Murayama.

⑬I'm the director of IPMU which () for The Institute for the Physics and Mathematics of the Universe.

⑭Here we try to address really basic questions about universe.

⑮How did it begin? What is it made of? Where it's going?
What are its basic ()? And why do we exist in it?

⑯So, here we have people coming from all over the world studying these questions.

⑰I know many people from France, Italy, Germany, Austria, Canada, United States, Argentina, Brazil, Australia.

⑱People coming from all over the world to work together on addressing these basic questions by combining research in mathematics, theoretical physics, experimental physics, and astronomy.

⑲For example, we would like to understand the nature of () energy that was the subject of the Nobel Prize in physics last year.

⑳We are now building a new digital camera for a wide-scale telescope which has 900 million pixels and weighs three tons. We would like to start the () later this year.

John Shilverman

㉑So my name is John Silverman.

㉒I'm from the United States and here at IPMU my research focuses on trying to understand supermassive black holes and whether they play any role in galaxy evolution in general.

㉓And to do so we utilize the Subaru telescope to () large surveys of the sky to map the distribution and this should then tell us whether, you know, how these supermassive black holes grow and their role in galaxy evolution.

Simeon Hellerman

㉔My name is Simeon Hellerman.

㉕I am an American.

②6 I () all my life in the United States () coming to Japan.

②7 And my research is on String Theory, Particle Physics, Cosmology, and Quantum Gravity and the relationships between those subjects.

Masahiro TAKADA

②8 My name is Masahiro Takada.

②9 Here (at) IPMU I'm working on (the) observation of cosmology.

③0 Currently, the () problem of modern cosmology is (that the) universe is in a phase of cosmic oscillations (~~se~~) which means our universe is filled in with this dark energy component we () dark energy.

③1 We are planning to carry out a really massive galaxy survey with the 8.2 meter Subaru telescope in Hawaii in order to study the Nature of dark matter and dark energy.

③2 Let's see what we ().

Mark Vagins

③3 My name is Mark Vagins.

③4 I am an American. I work in the Kamioka Observatory, which is a satellite of IPMU, and I work on () neutrinos of supernova explosions.

③5 So, what I'm trying to do is increase our sensitivity so we can see an explosion in about half the known universe.

東京大学国際高等研究所カブリ数物連携宇宙研究機構 (Kavli IPMU)

No.4

月 日 年 組 番 氏名

点/20点満点

4 リスニングテストです。空欄にあてはまる英単語もしくは英文を記入してください。

Toshio KUROKI, Program Director of WPI

- ① The Japanese government initiated WPI program in 2007, which aims to establish internationally opened and ((1) _____) visible institute in Japan.
- ② We have four ambitious goals or missions.
- ③ Number one is to achieve World top-class Science.
- ④ Number two is creation of breakthrough by fusion of ((2) _____) fields of Science.
- ⑤ Number three is internationalization.
- ⑥ Number four is reform of Science systems or cultures as well as administration systems.
- ⑦ We hope the WPI program further stimulate Science in this country. Thank you very much.

Narrator

- ⑧ The WPI program represents the pinnacle of Japanese Science, having achieved outstanding ((3) _____) in just the first five years since its inception.
- ⑨ The six centers in the programs are AIMR in Sendai, MANA in Tsukuba, IPMU in Tokyo, iCeMS in Kyoto, IFRcC in Osaka, and I2CNER in Fukuoka.
- ⑩ IPMU, located on the Kashiwa Campus of the University of Tokyo, aims to address the deepest mysteries of the Universe using the ((4) _____) of physics and mathematics.
- ⑪ Over 200 researchers are currently working to integrate the forefront knowledge of these two fields.

Hitoshi MURAYAMA, IPMU Director, The University of Tokyo.

⑫Hello, my name is Hitoshi Murayama.

⑬I'm the director of IPMU which stands for The Institute for the Physics and Mathematics of the Universe.

⑭Here we ((5) _____) to address really basic questions about universe.

⑮How did it begin? What is it made of ? Where it's going?
What are its basic laws? And ((6) _____) do we exist in it ?

⑯So, here we have people coming from all over the world studying these questions.

⑰I know many people from France, Italy, Germany, Austria, Canada, United States, Argentina, Brazil, Australia.

⑱People coming from all over the world to work together on addressing these basic questions by ((7) _____) research in mathematics, theoretical physics, experimental physics, and astronomy .

⑲For example, we would like to understand the nature of dark energy that was the subject of the Nobel Prize in physics last year.

⑳We are now building a new digital camera for a wide-scale telescope which has 900 million pixels and weighs three tons. We ((8) _____) like to start the survey later this year.

John Shilverman

㉑So my name is John Silverman.

㉒I'm from the United States and here at IPMU my research focuses on trying to understand supermassive black holes and whether they play any role in galaxy evolution in ((9) _____).

㉓And to do so we utilize the Subaru telescope to carry out large surveys of the sky to map the distribution and this should then ((10) _____) us whether, you know, how these supermassive black holes grow and their role in galaxy evolution.

Simeon Hellerman

②④My name is Simeon Hellerman.

②⑤I am an American.

②⑥I lived all my life in the United States before coming to Japan.

②⑦And my research is on String Theory, Particle Physics, Cosmology, and Quantum Gravity and the ((11) _____) between those subjects.

Masahiro TAKADA

②⑧My name is Masahiro Takada.

②⑨Here (at) IPMU I'm working on (the) observation of cosmology.

③⑩Currently, the biggest problem of modern cosmology is (that the) universe is in a phase of cosmic oscillations (æ) which means our universe is filled in with this dark energy component we call dark energy.

③⑪We are planning to carry out a really massive galaxy survey with the 8.2 meter Subaru telescope in Hawaii ((12) _____) the Nature of dark matter and dark energy.

4 単語

③⑫Let's see what we can find.

Mark Vagins (4.26)

③⑬My name is Mark Vagins.

③⑭I am an American. I work in the Kamioka Observatory, which is a satellite of IPMU, and I work on detecting neutrinos of supernova explosions.

③⑮So, ((13) _____) is increase our sensitivity so we can see an explosion in about half the known universe. 5 単語

月 日 年 組 番 氏名

5. まとめの課題です。ここまでの学習を参考にして、しっかり取り組みましょう。

(1) 指定段落の英文を写し、適切な日本語にしてください。

⑧、⑭、⑳、㉑、㉓

(2) 今回のインタビューの内容を、200文字程度で要約してください。

月 日 年 組 番 氏名

6. 「**Dictation** (ディクテーション)」に挑戦。さらなるリスニング力 (英語力) の向上を目指しましょう。納得するまで何度でも聞いてください。
(各段落の最初の単語だけ示しています。)

Toshio KUROKI, Program Director of WPI

- ① The Japanese government initiated WPI program in 2007, which aims to establish internationally opened and globally visible institute in Japan.
- ② We _____
- ③ Number one is to achieve World top-class Science.
- ④ Number _____
- ⑤ Number three is internationalization.
- ⑥ Number _____
- ⑦ We hope the WPI program further stimulate Science in this country. Thank you very much.

Narrator

- ⑧ The WPI program represents the pinnacle of Japanese Science, having achieved outstanding results in just the first five years since its inception.
- ⑨ The _____
- _____
- ⑩ IPMU, located on the Kashiwa Campus of the University of Tokyo, aims to address the deepest mysteries of the Universe using the tools of physics and mathematics.

⑪Over _____

Hitoshi MURAYAMA, IPMU Director, The University of Tokyo.

⑫Hello, my name is Hitoshi Murayama.

⑬I'm _____

⑭Here we try to address really basic questions about universe.

⑮How did it begin? What is it made of ? Where it's going? What are its basic laws? And why do we exist in it ?

⑯So, _____

⑰I know many people from France, Italy, Germany, Austria, Canada, United States, Argentina, Brazil, Australia.

⑱People _____

⑲For example, we would like to understand the nature of dark energy that was the subject of the Nobel Prize in physics last year.

⑳We _____

John Silverman

②① So my name is John Silverman.

②② I'm _____

②③ And to do so we utilize the Subaru telescope to carry out large surveys of the sky to map the distribution and this should then tell us whether, you know, how these supermassive black holes grow and their role in galaxy evolution.

Simeon Hellerman

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②⑤ I am an American.

②⑥ I _____

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③⑪ We _____

③② Let's see what we can find.

Mark Vagins

③③ My name is Mark Vagins.

③④ I _____

③⑤ So, what I'm trying to do is increase our sensitivity so we can see an explosion in about half the known universe.

原文 兼 解答

Toshio KUROKI, Program Director of WPI

- ① The Japanese government initiated WPI program in 2007, which aims to establish internationally opened and globally visible institute in Japan.
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- ⑩ IPMU, located on the Kashiwa Campus of the University of Tokyo, aims to address the deepest mysteries of the Universe using the tools of physics and mathematics.
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John Silverman

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㉓And to do so we utilize the Subaru telescope to carry out large surveys of the sky to map the distribution and this should then tell us whether, you know, how these supermassive black holes grow and their role in galaxy evolution.

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⑳ My name is Masahiro Takada.

㉑ Here (at) IPMU I'm working on (the) observation of cosmology.

㉒ Currently, the biggest problem of modern cosmology is (that the) universe is in a phase of cosmic oscillations (so) which means our universe is filled in with this dark energy component we call dark energy.

㉓ We are planning to carry out a really massive galaxy survey with the 8.2 meter Subaru telescope in Hawaii in order to study the Nature of dark matter and dark energy.

㉔ Let's see what we can find.

Mark Vagins

㉕ My name is Mark Vagins.

㉖ I am an American. I work in the Kamioka Observatory, which is a satellite of IPMU, and I work on detecting neutrinos of supernova explosions.

㉗ So, what I'm trying to do is increase our sensitivity so we can see an explosion in about half the known universe.

Cell Death, Autophagy and CVD - BCVS 2011

大隅 良典

本教材は、京都府立桃山高等学校のオリジナル作成物です。英文は、「Cell Death, Autophagy and CVD - BCVS 2011」をもとに、本校教員が文字化したものです。東京工業大学広報センターより、文字化した英文の使用許可を得ております。

音声動画 <https://www.youtube.com/watch?v=dfiPX7l1AaI>

Cell Death, Autophagy and CVD - BCVS 2011

No.1

月 日 年 組 番 氏名

- 1 今回の内容は、「 2016年ノーベル生理学医学賞受賞者の大隅 良典さんが、2011年に受けたインタビュー 」です。実際に映像を見る前に、どのような内容であるか予測しておきましょう。

課題

「大隅 良典さん」について、どのようなことを知っていますか。「知っていること・思いつくこと」など、できるだけたくさん書いてください。

Key words and phrases

月 日 年 組 番 氏名

- 2 2016年ノーベル生理学医学賞受賞者の大隅 良典さんが、2011年に受けたインタビューを数回聞きます。どのような内容であるか、しっかり聞いてください。内容について説明できるように、必要に応じて記録をとってください。（約4分です。）

⇒ どれくらい内容が理解できたと思いますか（自己判断）

1回目終了後 () %

2回目終了後 () %

3回目終了後 () %

聞き取れた内容（単語・文章）や印象に残ったことをメモしてください。

Cell Death, Autophagy and CVD - BCVS 2011

No.3

月 日 年 組 番 氏名

- 3 2016年ノーベル生理学医学賞受賞者の大隅 良典さんが、2011年に受けたインタビューを再度聞きます。以下に原稿を示します。空欄にあてはまる英単語もしくは英文を記入してください。

Rick

- ①My name is Dr. Rick Kitsis. I'm a professor of medicine and cell biology at the Albert Einstein College of Medicine in New York City, and my lab works on fundamental mechanisms of cell death, and cell death in human disease, such () heart disease.

Ohsumi

- ②My name is Yoshinori Ohsumi. Ahh, I'm from the Tokyo Institute of Technology. I'm just a yeast person. I'm not familiar with medical science. But, so, I'm working more than 30 years in (with) the ().

Rick

- ③And we're here today to discuss some of the talks that have been given including wonderful talk that Dr. Ohsumi just gave a few minutes ago.
- ④So why don't you tell us () the high points were of that talk.

Ohsumi

- ⑤OK. Umm, when I started Autophagy, (Autophagy,) even the term of Autophagy, not so many people interested and not understand Autophagy.
- ⑥Now Autophagy become quite popular (), but it's not so easy to really understand the whole process of Autophagy.
- ⑦Some misunderstand. But it's a so popular phenomenon () our body.

Rick

- ⑧I've always been amazed that since unicellular eukaryotes () back more than two billion years.

(Ohsumi Yeah.)

Rick

⑨Ahh, there is such conservation (Yeah) of this process, all the way up to us humans.

Ohsumi

⑩Yeah. It is very important to () the protein (so) efficiently because we don't have so many nutrients outside.

⑪For example, (for) every organism (there are,) starvation must be most () problem for living.

⑫So small amount of nutrient(s) should (be) recycle(d) to living (live).

⑬That's the reason from yeast to human Autophagy () be very important for survival.

⑭That's my ().

Rick

⑮Yeah, and in the heart where there's so much growth going on, like during hypertrophy, (Yeah) and shrinkage during Autophagy sounds like could be a very important process.

(**Ohsumi** Oh, yeah.)

Rick

⑯So cell death is also very important in heart disease because a lot of cells die during myocardial infarction and also in heart ().

⑰And we heard a very exciting talk about an hour ago from Dr. Jeffrey Molkenin at Cincinnati Children's Hospital Medical Center, and he was talking about how the proteins Bax and Bak, which are the poster children of apoptosis, how they () also be regulating necrosis, another form of cell death, very exciting talk.

⑱They talked about how that might be happening and what the implications might be for heart diseases.

⑲And I think ahh, I think we are going to hear about some other cell death things in this meeting in a couple a days on Wednesday, ahh, a few other talks that are () to cell death as well, perhaps TNF signaling and how it regulates the death receptor necrosis pathway.

⑳Thank you for watching AHA Science News.

Cell Death, Autophagy and CVD - BCVS 2011

No.4

月 日 年 組 番 氏名 _____ 点/20点満点 _____

4 リスニングテストです。空欄にあてはまる英単語もしくは英文を記入してください。

Rick

①My name is Dr. Rick Kitsis. I'm a professor of medicine and cell biology at the Albert Einstein College of Medicine in New York City, and my lab works on fundamental mechanisms of cell death, and cell death in human disease, such as heart disease.

Ohsumi

②My name is Yoshinori Ohsumi. Ahh, I'm from the Tokyo Institute of Technology. I'm just a yeast person. I'm not ((1) _____) medical science. But, so, I'm working more than 30 years in (with) the yeast. 2 単語

Rick

③And we're here today to discuss some of the talks that have been given including wonderful talk that Dr. Ohsumi just gave a few minutes ago.

④So ((2) _____) tell us what the high points were of that talk.
3 単語

Ohsumi

⑤OK. Umm, when I started Autophagy, (Autophagy,) even the term of Autophagy, not so many people ((3) _____) and not understand Autophagy.

⑥Now Autophagy become quite popular term, but it's not so easy to really understand the whole process of Autophagy.

⑦Some misunderstand. But it's a so popular phenomenon in our body.

Rick

⑧I've always been ((4) _____) that since unicellular eukaryotes go back more than two billion years.

(**Ohsumi** Yeah.)

Rick

⑨Ahh, there is such conservation (Yeah) of this process, all the way up to us humans.

Ohsumi

⑩Yeah. It is very important to recycle the protein (so) efficiently because we don't have so many ((5) _____) outside.

⑪For example, (for) every organism (there are,) starvation must be most serious problem for ((6) _____).

⑫So small amount of nutrient(s) should (be) recycle(d) to living (live).

⑬That's the reason from yeast to human Autophagy must be very important for survival.

⑭That's my opinion.

Rick

⑮Yeah, and in the heart where there's so much growth going on, like during hypertrophy, (Yeah) and shrinkage during Autophagy sounds like could be a very important process.

(**Ohsumi** Oh, yeah.)

Rick

⑯So cell death is also very important in heart disease because ((7) _____) cells die during myocardial infarction and also in heart failure. 3 単語

⑰And we heard a very exciting talk about an hour ago from Dr. Jeffrey Molkentin at Cincinnati Children's Hospital Medical Center, and he was talking about how the proteins Bax and Bak, which are the poster children of apoptosis, how they might also be regulating necrosis, another form of cell death, ((8) _____). 3 単語

⑱ They talked about how that might be happening and what the implications ((9) _____) for heart diseases. 2 単語 3 単語

⑲And I think ahh, I think we ((10) _____) hear about some other cell death things in this meeting in a couple a days on Wednesday, ahh, a few other talks that are related to cell death as well, perhaps TNF signaling and how it regulates the death receptor necrosis pathway.

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月 日 年 組 番 氏名

5. まとめの課題です。ここまでの学習を参考にして、しっかり取り組みましょう。

(1) 指定段落の英文を写し、適切な日本語にしてください。

⑥、⑩、⑯

(2) 今回のインタビューの内容を、200文字程度で要約してください。

Cell Death, Autophagy and CVD - BCVS 2011

No.6

月 日 年 組 番 氏名

6. 「**Dictation** (ディクテーション)」に挑戦。さらなるリスニング力 (英語力) の向上を目指しましょう。納得するまで何度でも聞いてください。
(各段落の最初の単語だけ示しています。)

Rick

①My name is Dr. Rick Kitsis. _____

Ohsumi

②My name is Yoshinori Ohsumi. Ahh, I'm from the Tokyo Institute of Technology. I'm just a yeast person. I'm not familiar with medical science. But, so, I'm working more than 30 years in (with) the yeast.

Rick

③And _____

④So why don't you tell us what the high points were of that talk.

Ohsumi

⑤OK. _____

⑥Now Autophagy become quite popular term, but it's not so easy to really understand the whole process of Autophagy.

⑦Some misunderstand. But it's a so popular phenomenon in our body.

Rick

⑧I've _____

(Ohsumi Yeah.)

Rick

⑨Ahh, there is such conservation (Yeah) of this process, all the way up to us humans.

Ohsumi

⑩Yeah. _____

⑪For example, (for) every organism (there are,) starvation must be most serious problem for living.

⑫So small amount of nutrient(s) should (be) recycle(d) to living (live).

⑬That's _____

⑭That's my opinion.

Rick

⑮Yeah, and in the heart where there's so much growth going on, like during hypertrophy, (Yeah) and shrinkage during Autophagy sounds like could be a very important process.

(Ohsumi Oh, yeah.)

Rick

⑯So _____

⑰And we heard a very exciting talk about an hour ago from Dr. Jeffrey Molkentin at Cincinnati Children's Hospital Medical Center, and he was talking about how the proteins Bax and Bak, which are the poster children of apoptosis, how they might also be regulating necrosis, another form of cell death, very exciting talk.

⑱They _____

①⑨And I think ahh, I think we are going to hear about some other cell death things in this meeting in a couple a days on Wednesday, ahh, a few other talks that are related to cell death as well, perhaps TNF signaling and how it regulates the death receptor necrosis pathway.

②⑩Thank you for watching AHA Science News.

原文 兼 解答

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(Ohsumi) Yeah.)

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平成 27 年度指定スーパーサイエンスハイスクール

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平成 29 年 3 月発行

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